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VAXTMmate

*User's Guide
Volume 2*

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User's Guide

Volume 2

First Printing, September 1986

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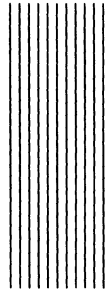
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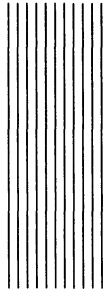
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Preface *Volume 2*



Welcome to Volume 2 of the *VAXmate User's Guide*. This volume explains how to use the MS-DOS operating system on your VAXmate workstation. It also covers the messages that can be displayed when you use the VAXmate system software.

This software and your VAXmate workstation create a powerful tool for you to use to perform your everyday tasks quickly and efficiently.

Before Reading This Volume

You should read the *VAXmate System Handbook* and the Preface to Volume 1 of this guide before reading Volume 2.

Conventions Used

Follow these conventions:

- In examples of dialog between you and the VAXmate workstation, what is displayed on the screen is shown in black type; what you enter from the keyboard is shown in color.
- Make sure you type all spaces and punctuation marks exactly as they are printed.
- A key sequence such as Alt/Tab means to hold down the Alt key while you press the Tab key.
- A key sequence such as Alt/Shift/Tab means while you hold down both the Alt key and the Shift key, press the Tab key.
- Wherever you see the term workstation, it means your VAXmate workstation.



Volume Organization

This second volume of the *VAXmate User's Guide* is organized into the following parts.

MS-DOS

MS-DOS is the operating system used by your VAXmate workstation. The information in this part is for the experienced MS-DOS user.

The first chapters cover everything you need to know about the operating system, from creating files, directories, and paths to preparing the hard disk; from using command formats to using internal and external commands. The commands are also listed alphabetically.

In addition, a description is provided for the MS-DOS editing and function keys, use of industry standard compose sequences, batch processing, and DEBUG.

Other chapters explain networking, the network file transfer (NFT) commands, and the SETHOST command. The SETHOST command creates an emulator session using the DECnet network under the MS-DOS operating system.

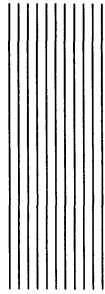
Appendixes G, H, and I explain international features (including country keyboard layouts), reading diskettes, and configuring your system.

Messages

This part contains help on messages, other than informational ones, that may be displayed on your screen while you use the VAXmate system software described in this guide. The messages are listed alphabetically.

Appendixes J and K describe additional options you can order for your VAXmate workstation and contain the system specifications for your VAXmate workstation.

Chapter 29 ***Using MS-DOS*** ***With MS-Windows***



Your workstation uses the MS-DOS Version 3.10 operating system to control all its operations. This operating system enables you to:

- Execute MS-DOS operating system commands
- Use MS-Windows
- Use the network

This chapter contains information about:

- Using external MS-DOS commands with MS-Windows
- Using internal MS-DOS commands with MS-Windows
- Exiting from MS-Windows to MS-DOS
- Getting help

Characteristics of Commands and Device Drivers

The MS-DOS operating system contains internal and external commands. Table 29-1 lists the characteristics of these commands, plus the characteristics of device drivers.



Table 29-1 Command Characteristics

Internal Commands	External Commands	Device Drivers
Are not shown in a directory listing.	Are shown in a directory listing.	Are shown in a directory listing.
Are stored in the COMMAND.COM file. They are automatically read into memory when you turn on your workstation.	Are stored as files on a diskette, hard disk, or server. They are read into memory only when you request it.	Are stored as files on a diskette, hard disk, or server. They are loaded using the DEVICE statement in the CONFIG.SYS file.
Can be used any time you see the MS-DOS operating system prompt.	Can be used if the file exists on a diskette, hard disk, or server. End with a file extension of .COM, .EXE, or .BAT.	Can only be used if previously loaded using the DEVICE statement in the CONFIG.SYS file. Usually end with a file extension of .SYS.

Using External Commands With MS-Windows

There are a number of methods you can use to execute an external command in MS-Windows. However, the following method is the best method because:

- It uses the values contained in the external command's program information file (.PIF) file.
- You do not need to be in the directory where the external command exists to execute it.

To use an external command with MS-Windows:

1. Highlight the Run command in the MS-DOS Executive File menu box.
2. Release the left mouse button.

A dialog box is displayed.
3. Type the command you want to run and its parameters.
4. Click on the Ok command button.



To return to the MS-DOS Executive window from a command that ran in a window:

1. Highlight the Close command in the System menu box.
2. Release the left mouse button.

To return to the MS-DOS Executive window from a command or application program that did not run in a window:

1. Exit the command or application program.
2. Press any key to continue.

Using Internal Commands With MS-Windows

Many of the internal MS-DOS commands have equivalent commands in MS-Windows. Therefore, you should use the equivalent MS-Windows command whenever possible. Table 29-2 contains a list of MS-DOS internal commands and the equivalent MS-Windows command.

Table 29-2 Equivalent MS-Windows Commands

MS-DOS Command	Equivalent MS-Windows Command	Location of MS-Windows Command
CHDIR	Change Directory	MS-DOS Executive Window Special menu box
COPY	Copy	MS-DOS Executive Window File menu box
DATE	Date	Control Panel (CONTROLEXE)
DEL	Delete	MS-DOS Executive Window File menu box
DIR	*	MS-DOS Executive Window View menu box
ERASE	Delete	MS-DOS Executive Window File menu box
EXIT	End Session	MS-DOS Executive Window Special menu box
MKDIR	Create Directory	MS-DOS Executive Window Special menu box
REN	Rename	MS-DOS Executive Window File menu box
RMDIR	Delete	MS-DOS Executive Window File menu box
TIME	Time	Control Panel (CONTROLEXE)
VOL	Set Volume Name	MS-DOS Executive Window Special menu box

* There is no equivalent MS-Windows command for the MS-DOS DIR command.



To execute an internal command that does not have an MS-Windows equivalent command:

1. Highlight the Run command in the MS-DOS Executive File menu box.
2. Release the left mouse button.

A dialog box is displayed.

3. Type:

```
COMMAND.COM
```

4. Click on the Ok command button.

The MS-DOS operating system prompt is displayed.

5. Type the internal command you want to use and press the Return key.

You can use any of the internal MS-DOS operating system commands (except the CTTY command).

To return to the MS-DOS Executive Window:

1. Type:

```
A:\>EXIT 
```

2. Highlight the Close command in the System menu box.
3. Release the left mouse button.

Getting Help

The Information System provides you with information about the MS-DOS operating system and your workstation. The Information System is represented by an icon in the Icon area at the bottom of a window. The icon is a square with the letter "i" inside.



To use the Information System when the icon is displayed, expand the Information System icon.

To use the Information System when the icon is not displayed:

1. Highlight the Run command in the MS-DOS Executive File menu box.
2. Release the left mouse button.

A dialog box is displayed.

3. Type:

`Info`

4. Click on the Ok command button.

To return to the MS-DOS Executive window:

1. Highlight the Close command in the System menu box.
2. Release the left mouse button.
3. Click on the Yes command button.

Exiting from MS-Windows

You can use both external and internal MS-DOS operating system commands with MS-Windows. However, if you want to use the MS-DOS operating system commands extensively, we suggest you exit from MS-Windows and use the commands at the MS-DOS operating system prompt.

To exit from MS-Windows:

1. Highlight the Close command in the the System Menu box.
2. Release the left mouse button.

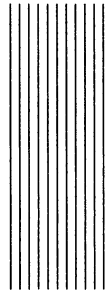
The End Session window is displayed.

3. Click on the Ok command button.

The MS-DOS operating system exits from MS-Windows and displays its prompt.

Chapter 30

Commands, Directories, Paths, and Files



This chapter discusses:

- General command format
- Information common to all commands
- Support files
- Directories
- Paths
- Files
- Wildcards

General Command Format

A command is an instruction that tells the MS-DOS operating system to perform a task. You type a command and its parameters and qualifiers on the command line following the MS-DOS operating system prompt. For example:

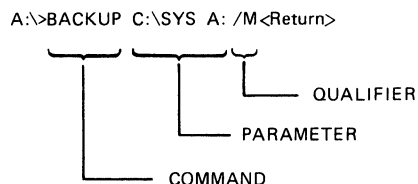


Figure 30-1 Command Line Format

When you type commands, exact spacing and punctuation are important. Therefore, separate a command and its parameters with a space.



Information Common to All Commands

The following information applies to MS-DOS commands:

- Many commands are followed by qualifiers. These qualifiers supply additional information for specific command execution. Qualifiers are preceded by a forward slash (/). For example:

```
C:\>BACKUP C: A: /A 
```

```
C:\>FONT /D 
```

- Some commands are followed by arguments. You usually choose between two or more arguments. For example:

```
A:\>BREAK ON 
```

- Type commands and parameters in uppercase or lowercase letters, or a combination of both.
- Separate commands and parameters with delimiters. Valid delimiters are:

– Space

– Tab key

- Include the file extension when referring to a file that has a file extension (except to run external commands and batch files). For example, to execute the TEST.BAT batch file on drive A, type:

```
A:\>TEST 
```

- Commands take effect only after you press the Return key.
- Wildcards and reserved words are not allowed in the names of any commands.



- The prompt is the default drive designation followed by a colon, a backslash and a greater-than sign. For example, the prompt for drive A is:

A:\>

You can customize the prompt to include other items.

- Some command explanations refer to diskette drives or files as the source and destination. The source is the one from which you are transferring information. The destination is the one to which you are transferring information.

In all cases, type the source before the destination. The following example of the COPY command illustrates the order:

```
A:\>COPY A:SOURCE.TXT C:DESTINAT.TXT Return
      1 File(s) copied
```

A:\>

Support Files

The MS-DOS Version 3.10 operating system uses different support files to perform its functions. Table 30-1 lists the support files and their use.

Table 30-1 Support Files and Usage

File	Contents
.COU	Contains country-specific information that is installed using the LCOUNTRY command.
.FNT	Contains a text font file that is installed using the FONT command.
.GRF	Contains a graphics font file that is installed using the GRAFTABL command.
.KEY	Contains a keyboard map file that is installed using the KEYB command.
.PIF	Contains program information needed by MS-Windows to enable smooth execution of MS-DOS operating system commands while in a window.
.SRT	Contains a sort table used by the SORT command.



Directories

Directories store information about files on a disk or server. For example, directories contain information about:

- File names
- File sizes
- File locations
- File modification dates

The directory you are currently in is called your current or default directory.

You can create and maintain directories on the same disk to organize and store data conveniently. This method of organizing your files is called a hierarchical directory structure.

Hierarchical Directory Structure

A hierarchical directory structure resembles a tree structure: directories are branches of the tree and files are the leaves. The root is the first level in the directory structure, and does not appear in a directory listing. The root directory is automatically created when you format a disk and start copying files to it.

The tree or file structure grows as you create new directories for groups of files. Within each new directory, you can add files and create new directories. Figure 30-2 shows a hierarchical directory structure:

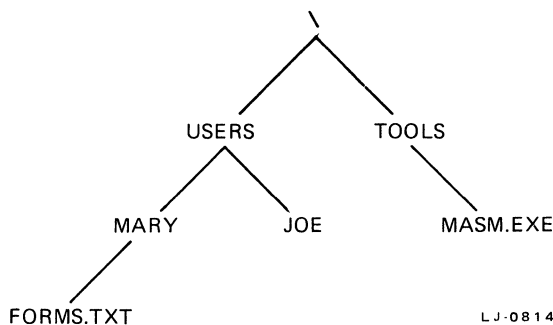


Figure 30-2 Hierarchical Directory Structure



`\` is the root directory. The MS-DOS operating system creates this directory when you format a disk or diskette.

USERS and TOOLS are directories under the directory named ROOT.

MASM.EXE is a file in the directory named TOOLS.

MARY and JOE are directories under the directory named USERS.

FORMS.TXT is a file in the directory named MARY.

You can move around this tree structure. For example, you can find any file in the system by starting at the root and traveling along the branches to the desired file. Conversely, you can start where you are within the file system and travel towards the root.

Paths

A path name is a directory name, or sequence of directory names, followed by an optional file name. When you use directories you must use a path name to tell the MS-DOS operating system where files are located in the directory structure. Each directory name is separated from the previous one by a backslash (`\`).

The format of a path name is:

`[drv:][\]directory[\directory]...[\filename]`

For example:

`A:\USER\MARY`

If a path name begins with a slash, the MS-DOS operating system begins searching for the specified file at the root directory. Otherwise, it begins searching for the specified file from the current directory.



When you are in your current directory, you can use a file name and its corresponding path name interchangeably. Some sample names are:

- \ Indicates the root directory. When used alone, \ indicates the root directory.
- \PROGRAMS Is a directory named PROGRAMS under the root directory.
- A:\USERS\MARY\FORMS.TXT Is a typical full path name. This path name is a file named FORMS.TXT in the directory named MARY belonging to the directory named USERS on drive A.
- MARY\FORMS.TXT Is a relative path name. It names the file FORMS.TXT in the directory MARY of the current directory. If the current directory is the root (\), it names \MARY\FORMS.TXT.
- TEXT.TXT Is the name of a file or directory in the current directory.

The MS-DOS operating system provides special shorthand notations for the current directory and the directory above the current directory:

- . Is the shorthand notation used to indicate the current directory in all hierarchical directory listings. The MS-DOS operating system automatically creates this entry when a directory is made.
- .. Is the shorthand notation used to indicate the directory above your current directory. The MS-DOS operating system automatically creates this entry when a directory is made.

To see this notation, go to a directory other than the root directory (SYS in this example) and type:

A:\SYS>DIR Return

Volume in drive A is MSDOS
Directory of A:\SYS

```

.           <DIR>      1-01-86  9:00a  ← Current directory
..          <DIR>      1-01-86  9:00a  ← Directory above current directory
TEST       ASM        1-01-86  9:04a  ← File in A:\SYS
          3 File(s)  929381 bytes free
```



Paths With External Commands

The MS-DOS operating system must read an external command from a disk before it can execute the command. Therefore, you must tell the MS-DOS operating system where to look for that command file. You can either type the path with the file name, or set the path using the PATH command.

After you specify a path using the PATH command, the MS-DOS operating system searches your current directory and those directories specified in the PATH command.

To tell the MS-DOS operating system to always search the directory A:\BIN, type:

```
A:\> PATH A:\BIN 
```

To determine the current path, type:

```
A:\> PATH 
```

Files

A file is a collection of related information. All programs, text, and data reside in files, and each file has a unique name.

Naming Files

Give your files unique names. You cannot have two files with the same name. File names help you remember what each file contains and eliminate confusion when a directory contains many files.

A file name has two parts:

- The file name (1 to 8 characters long)
- The file extension (0 to 3 characters long)

Use a period (.) to separate a file name and a file extension.



You can type the file name and file extension using the following characters:

A-Z	a-z	1-9
\$	&	#
%	'	(
)	-	@
^	{	}
~	'	!
-		

Illegal File Names

Because the MS-DOS operating system reserves certain words for special purposes, you cannot use the following words as file names:

- AUX
- PRN
- CLOCK\$
- LPT2
- COM1
- CON
- NUL
- LPT1
- LPT3
- COM2

Wildcards

With most MS-DOS operating system commands, you can use two special characters called wildcards to replace a character or a group of characters. Wildcards take the place of characters in file names and file extensions.

The wildcards are:

- The question mark (?)
- The asterisk (*)



Question Mark

A question mark in a file name or file extension indicates that any single character or no character can occupy that position. For example, to display the files MEMO1.TXT, MEMO2.TXT, and MEMO3.TXT, type:

```
A:\>DIR MEMO?.TXT 
```

```
Volume in drive A is DOS
```

```
Directory of A:
```

```
MEMO1   TXT           5981  1-01-86  9:00a
MEMO2   TXT           1890  1-01-86  9:30a
MEMO3   TXT             798  1-01-86  9:44a
        3 File(s)      950473 bytes free
```

Asterisk

An asterisk in a file name or file extension indicates that any number of characters (zero or more) can occupy that position. For example, to display the files MILLER.TXT, MEMO1.TXT, MEMO2.TXT, and MEMO3.TXT, type:

```
A:\>DIR M*.TXT 
```

```
Volume in drive A is DOS
```

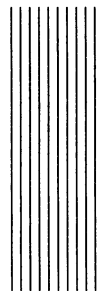
```
Directory of A:
```

```
MILLER  TXT           3290  1-05-86 10:34a
MEMO1   TXT           5981  1-01-86  9:00a
MEMO2   TXT           1890  1-01-86  9:30a
MEMO3   TXT             798  1-01-86  9:44a
        4 File(s)      947183 bytes free
```

The wildcard designations *.* and * refer to all files in your current directory.

Chapter 31

Using the Hard Disk



This chapter discusses:

- What a hard disk is
- How to prepare your hard disk
- How to copy files to your hard disk
- How to repartition your hard disk

What Is a Hard Disk?

A hard disk is a large capacity, rigid disk sealed in a drive unit for protection. A hard disk's storage capacity is defined in megabytes. A byte stores one character; a megabyte stores one million characters. For example, if your workstation has a 20-megabyte hard disk in the optional expansion box, you can store 20 million characters on the disk.

Preparing Your Hard Disk

Before you can use your hard disk, you have to:

- Install your hard disk according to the directions in the *VAXmate Expansion Box Installation Guide*.
- Run the FDISK command.
- Run the FORMAT command.



Setting the Drive Type

Before you can use your hard disk, you have to tell the MS-DOS operating system its size. You do this using the FDISK command.

To set the drive type:

1. Type:

```
A:\> FDISK 
```

The main FDISK menu is displayed.

```
Hard Disk Setup Program Version 1.00
(C) Copyright 1985, 1986 by Digital Equipment Corporation

Drive type is DEC RD31

Hard disk partitions:
  MS-DOS C: (startup partition), 613 cylinders long.

Startup priority: floppy disk, hard disk, network.

  1. Set drive type.
  2. Initialize the drive. (WARNING: erases the entire drive)
  3. Add a partition.
  4. Delete a partition.
  5. Set the startup partition.
  6. Prepare drive for shipping.
  7. Select network startup priority.
  8. Exit from this program.

Enter your selection by typing a number followed by <Return> or by
pressing the corresponding function key:
```



2. Type the number associated with the “Set the drive type” option, and press:

Return

Another menu is displayed.

```
Hard Disk Setup Program Version 1.00
(C) Copyright 1985, 1986 by Digital Equipment Corporation
```

```
How do you want to set the drive type?
```

1. Set type to DEC RD31 (20MByte)
2. Set type to DEC RD32 (40MByte)
3. Select from industry standard types 1 through 14.
4. Select from industry standard types 16 through 23.
5. Enter a parameter table.
6. Return to main menu without changing type.

```
Enter your selection:
```

- If you have a DIGITAL 20 megabyte hard disk, type “1” and press the Return key. Proceed to the “Initializing Your Hard Disk” section.
- If you have a DIGITAL 40 megabyte hard disk, type “2” and press the Return key. Proceed to the “Initializing Your Hard Disk” section.



Using the Hard Disk

- If you have an industry standard hard disk, type either “3” or “4” and press the Return key.

Another menu is displayed.

```
Hard Disk Setup Program Version 1.00
(C) Copyright 1985, 1986 by Digital Equipment Corporation

Industry standard types
(cylinders x heads x sectors) pre-comp cylinder, landing zone

 1. Type 1 (306 x 4 x 17) 128, 305
 2. Type 2 (615 x 4 x 17) 300, 615
 3. Type 3 (615 x 6 x 17) 300, 615
 4. Type 4 (940 x 8 x 17) 512, 940
 5. Type 5 (940 x 6 x 17) 512, 940
 6. Type 6 (615 x 4 x 17) none, 615
 7. Type 7 (462 x 8 x 17) 256, 511
 8. Type 8 (733 x 5 x 17) none, 733
 9. Type 9 (900 x 15 x 17) none, 901
10. Type 10 (820 x 3 x 17) none, 820
11. Type 11 (855 x 5 x 17) none, 855
12. Type 12 (855 x 7 x 17) none, 855
13. Type 13 (306 x 8 x 17) 128, 319
14. Type 14 (733 x 7 x 17) none, 733

15. Return to the main menu without changing type.

Enter your selection:
```

Type the number associated with your industry standard hard disk and press the Return key. Proceed to the “Initializing Your Hard Disk” section.



- If you have a hard disk other than a DIGITAL hard disk or an industry standard hard disk, type:

5

The following information is displayed.

```
Hard Disk Setup Program Version 1.00
(C) Copyright 1985, 1986 by Digital Equipment Corporation

You will be required to enter the following information:

    Number of cylinders (tracks per surface).
    Number of heads (surfaces).
    Number of sectors per track (512 bytes each).
    Number of the first cylinder that requires write precompensation.
    Number of the cylinder to be used as a landing (parking) zone.

After you enter the data you will be given the opportunity to return to
the main menu without changing the drive type.

Enter number of cylinders:
```

Enter the information requested.

To set the drive type, press:

To abandon the changes and return to the main menu, press:

After you set the drive type, the MS-DOS operating system knows the size of the hard disk and uses this information later when you partition the hard disk.



Initializing Your Hard Disk

After you set the drive type, you have to initialize the hard disk. During the initialization process, the MS-DOS operating system places 512-byte sectors on the hard disk.

To initialize the hard disk (from the FDISK main menu):

1. Type the number associated with the “Initialize the drive” option, and press:

Return

Another screen is displayed.

2. To continue the initialization process, press:

F10

To stop the initialization process and return to the main FDISK menu, press:

Return

Partitioning Your Hard Disk

After you initialize the hard disk, you have to divide it into sections, called partitions. Each partition can have a much larger storage capacity than a single diskette, depending upon the size partitions you choose.

You determine the size of each partition on your hard disk. You can create one to four partitions. Each partition can be any size, as long as the total size of all partitions does not exceed the total size of the hard disk.

You can think of partitions as different MS-DOS operating system drives. For example, four equal partitions on a 20-megabyte hard disk would give you:

Drive C:	25%	5 megabytes
Drive D:	25%	5 megabytes
Drive E:	25%	5 megabytes
Drive F:	25%	5 megabytes



You could also partition your hard disk with just two partitions, giving you:

Drive C: 50% 10 megabytes

Drive D: 50% 10 megabytes

We recommend you make only one partition, and that you make that partition 100 percent of your hard disk's available storage capacity. This enables you to use all the available storage capacity of your hard disk in one directory structure.

To add a partition to your hard disk (from the FDISK main menu):

1. Type the number associated with the "Add a partition" option, and press:

A screen is displayed that indicates the percent of available storage space on your hard disk.

2. Enter the size of the partition you want by percent and press:

Continue this step until you add the partitions you want. Remember, you can have only four partitions.

If you have added or deleted any partitions, you must now restart the MS-DOS operating system by pressing:



Setting the Start-up Partition

The start-up partition is the partition from which you start the MS-DOS operating system. It usually contains:

- The MS-DOS operating system files
- The CONFIG.SYS file
- The AUTOEXEC.BAT file

You set the start-up partition so that the MS-DOS operating system can be read into memory from the hard disk. This eliminates the need for a key diskette in the diskette drive every time you turn on your workstation, or restart the MS-DOS operating system.

We recommend you make your first partition your start-up partition. For example, if you have three partitions (drives C:, D:, E:), make drive C: your start-up partition.

To set the start-up partition (from the FDISK main menu):

1. Type the number associated with the “Set the start-up partition” option, and press:

Return

Another menu is displayed.

2. Select the partition you want as the start-up partition, and press:

Return

3. To exit from the FDISK program, type the number associated with the “Exit from this program” option, and press:

Return

If you have added or deleted any partitions, you must now restart the MS-DOS operating system by pressing:

Ctrl/Alt/Del



Formatting Your Hard Disk

After you partition your hard disk, you have to format each partition. Formatting places the MS-DOS operating system directory structure on each partition.

During the formatting process, you should copy the MS-DOS operating system to the start-up partition. This enables you to:

- Save your key diskette
- Start the MS-DOS operating system from the hard disk
- Use other diskettes in your diskette drive

To format your start-up partition and copy IO.SYS, MSDOS.SYS, COMMAND.COM, and the boot loader to it (drive C in this example):

1. Type:

```
A:\>FORMAT C: /S 
```

The FORMAT command with the /S parameter formats the specified partition and copies IO.SYS, MSDOS.SYS, COMMAND.COM, and the boot loader to the partition. IO.SYS and MSDOS.SYS are hidden files, so you cannot see them in a directory listing.

To format any partition other than your start-up partition (drive D in this example):

1. Type:

```
A:\>FORMAT D: 
```



Copying Files to Your Hard Disk

After you format a partition, you can copy files to it using the COPY command.

To copy all files from drive A to drive C:

1. Type:

```
A:\>COPY *.* C: 
```

Repartitioning the Hard Disk

To repartition your hard disk, use the FDISK command.

CAUTION

Deleting a partition on your hard disk destroys all existing data on that partition. Therefore, back up or copy all files on the partition you want to delete to diskettes or to a server before you delete the partition.

To repartition your hard disk:

1. Type:

```
A:\>FDISK 
```

The FDISK main menu is displayed.

2. Type the number associated with the “Delete a partition” option, and press:

Another menu is displayed.

3. Type the number associated with the partition you want to delete and press:

Continue deleting partitions until you delete all the partitions you want to delete.



4. Now, type the number associated with the “Add a partition” option, and press:

Return

5. Type the percentage of the available space you want in the partition, and press:

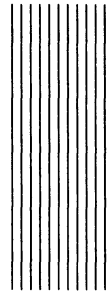
Return

Continue adding partitions until you add all the partitions you want to add. Remember you can only have four partitions.

After you add the partitions you want, restart the MS-DOS operating system. Remember also to format the partitions you have added.

Chapter 32

MS-DOS Operating System Commands



This chapter discusses the MS-DOS operating system commands and contains the following information about each command:

- Purpose
- Format
- Comments
- Examples

The commands are listed alphabetically for easy reference.

In most instances, the MS-DOS operating system response follows an example.



Conventions Used

Table 32-1 lists the conventions used in the discussion of commands.

Table 32-1 Conventions

Designation	Meaning
filename.ext	Is any valid drive, path, file name and file extension. Both the drive and the path are optional. Valid drives are diskette drive A:, and hard disk drives C:, D:, E:, F:. The file name does not refer to a device or to a disk drive designation.
[]	Square brackets indicate that an item is optional. If you include the optional information, do not type the square brackets. For example, when you use the FONT command and specify a file name, you do not have to specify the file extension: FONT filename[.ext] If you want to include the file extension, type only the extension.
	A vertical bar indicates that you must choose between two or more items. For example, if you specify an argument after the BREAK command, you must choose ON or OFF: BREAK [ON OFF]
...	Indicates that the preceding information can be repeated. In the following example, you can specify more than one file name and file extension when you use the ATTRIB command: ATTRIB filename.ext ...

Type all punctuation as it is shown. Do not type square brackets, braces, or the bar.

Commands

Table 32-2 lists and briefly describes the MS-DOS internal and external commands. Use this table as a quick reference once you become familiar with the MS-DOS operating system commands.

A detailed description of each command follows the table.

**Table 32-2 MS-DOS Operating System Commands**

Command	Type	Use
ANSI	Driver	A console device driver that accepts ANSI terminal escape sequences
APPEND	External	Sets a search path for nonexecutable files
ASSIGN	External	Sends input/output from one drive to a different drive
ATTRIB	External	Sets, clears, and displays MS-DOS file attributes
BACKUP	External	Makes back-up copies of files from any disk (memory drive, diskette, hard disk)
BREAK	Internal	Sets/clears Ctrl/C check
CHDIR	Internal	Changes directories
CHKDSK	External	Scans the disk of the default or designated drive and checks for errors
CLS	Internal	Clears the screen
COMMAND	External	Starts the command processor
COPY	Internal	Copies files you specify
CTTY	Internal	Changes console TTY
DATE	Internal	Displays and sets the date
DEL	Internal	Deletes files you specify
DIR	Internal	Lists requested directory entries
DISKCOPY	External	Copies diskettes by tracks, not files
ECHO	Internal	Turns on/off the echoing of batch file command lines to the workstation and turns on/off the MS-DOS operating system prompt
EDLIN	External	Is a line editor
ERASE	Internal	Deletes files you specify
EXE2BIN	External	Converts relocatable executable files to binary format
EXIT	Internal	Exits from the command processor, and returns to the previous level
FC	External	Compares files and displays differences
FDISK	External	Initializes and partitions the hard disk
FIND	External	Searches for a string of text in a specified file



Table 32-2 MS-DOS Operating System Commands (cont.)

Command	Type	Use
FONT	External	Loads the specified character font into font RAM
FOR	Internal	Provides repeated execution of commands in a batch file or at the MS-DOS operating system prompt
FORMAT	External	Formats a disk or floppy diskette for the MS-DOS operating system
GOTO	Internal	Provides logic flow control for batch file command lines
GRAFTABL	External	Loads graphic character fonts
GRAPHICS	External	Enables the printing of a graphic screen display on a printer in graphics mode
IF	Internal	Provides logic flow control for batch file command lines
JOIN	External	Joins a disk drive to a specific path name
KEYB	External	Loads a specified keyboard map file
LABEL	External	Creates, changes, or deletes a volume label
LCOUNTRY	External	Loads country-specific information and case conversion tables
MDRIVE	Driver	Creates a memory drive in your user memory or in extended memory
MKDIR	Internal	Creates a directory
MODE	External	Sets parameters for printer set up, video, communications set up, printer redirection, and keyboard
MORE	External	Displays output one screen at a time
NET		Enables you to use network resources if you are connected to a network
PATH	Internal	Sets or displays a command search path
PAUSE	Internal	Temporarily suspends execution of a batch file
PERMIT	External	Offers a single session, single connection file server
PRINT	External	Prints specified files
PROMPT	Internal	Enables customizing of the command prompt
RECOVER	External	Recovers a files or disk containing bad sectors

**Table 32-2 MS-DOS Operating System Commands (cont.)**

Command	Type	Use
REM	Internal	Displays a comment in a batch file
REN	Internal	Renames files
RESTORE	External	Restores files saved using the BACKUP command
RMDIR	Internal	Removes a directory
SELECT	External	Enables the changing of the CONFIG.SYS file and AUTOEXEC.BAT file to the desired character set and country information
SET	Internal	Sets one string value to another string value, and displays the system environment
SHARE	External	Installs file sharing and locking for a network
SHIFT	Internal	Increases the number of replaceable parameters in the batch process
SORT	External	Sorts data alphabetically, forward or backward
SUBST	External	Substitutes a logical drive for a path name
SYS	External	Transfers the MS-DOS operating system files from one disk to another disk
TIME	Internal	Displays and sets the time
TYPE	Internal	Displays the contents of the specified file
VER	Internal	Displays the MS-DOS operating system version number
VERIFY	Internal	Turns on/off the verifying of information written to a diskette or disk
VOL	Internal	Displays the default drive's label

You cannot use the following MS-DOS operating system commands with a remote network resource as the target:

CHKDSK	DISKCOPY
FORMAT	JOIN
LABEL	RECOVER
SUBST	SYS

You can use these commands from a network server on your local resources.



ANSI

ANSI.SYS is an MS-DOS loadable device driver that replaces the standard console device driver. An ANSI escape sequence is a series of characters that begins with an escape character or keystroke and defines the following functions:

- Cursor control functions
- Erase functions
- Set graphics rendition function
- Set mode functions
- Reset mode functions
- Keyboard key reassignment functions

Format

The following command line must be included in your CONFIG.SYS file to install the ANSI device driver:

```
DEVICE=[drv:][\path\]ANSI.SYS
```

CAUTION

We recommend you do not change your CONFIG.SYS file if you are using your workstation in a network environment.

For more information about ANSI.SYS, see the *VAXmate Technical Reference Manual*.

APPEND

Purpose

To set the search path for nonexecutable files outside the current directory, use the APPEND command. The APPEND command is an external command.

Format

APPEND [=] [drv:\path];[drv:\path]; [...]

Where:

drv: Is the drive you want to append to your current directory.

path Is the path you want to append to your current directory.

Comments

The APPEND command enables you to store and use data files without going to the directory that contains those files.

Appended directories can be:

- Local directories on your workstation
- Remote directories on a server
- A combination of both

If an application program reads a file from an appended directory and then writes it back to disk, the file is written to the current directory.

You can append as many directories as you can specify with 128 characters.

Each time you use the APPEND command, you replace the effect of the preceding APPEND command (unless you type APPEND with no parameters).

If you use the APPEND command and the ASSIGN command together, you must enter the APPEND command first.

You can cancel any APPEND commands (see the following examples).

||||| *APPEND*

Example 1

To append the directory A:\ACCOUNTS to the directory A:\, type:

A:\> APPEND A:\ACCOUNTS

A:\>

Example 2

To see a list of appended directories, type:

A:\> APPEND

APPEND=A:\ACCOUNTS

A:\>

Example 3

To cancel any previous appends, type:

A:\> APPEND ;

A:\>

ASSIGN

Purpose

To send input and output from one drive to another, use the ASSIGN command. The ASSIGN command is an external command.

Format

ASSIGN [x [=] y]

Where:

- x Is the drive that an application program reads from and writes to.
- y Is the drive that you want an application program to read from and write to.

Comments

The ASSIGN command enables you to reassign the drive an application program reads from and writes to. For example, assume you use an application program that reads data from drive A. To direct the same application to read from drive C, use the ASSIGN command.

Do not use the ASSIGN command with the BACKUP or PRINT commands or during normal use of the MS-DOS operating system. The ASSIGN command hides the true device type from commands that require actual drive information.

You do not have to type the colon after the drive letters you enter for the x and y values.

The FORMAT and DISKCOPY commands ignore any drive reassignments.

You can reset all drives to their original assignment (see the following examples).

||||| *ASSIGN*

Example 1

To send requests that an application program makes for drive A to drive C, type:

C:\>ASSIGN A C

C:\>

Example 2

To send requests that an application program makes for drive A or drive C to drive D, type:

D:\>ASSIGN A=D C=D

D:\>

Example 3

To reset drive A (which was assigned to drive D in the previous example) back to drive A, type:

D:\>ASSIGN A=A

D:\>

Example 4

To reset all drives to their original assignment, type:

D:\>ASSIGN

D:\>

ATTRIB

Purpose

To set, clear and display MS-DOS file attributes, use the ATTRIB command. The ATTRIB command is an external command.

Format

ATTRIB [filename.ext [...] [+/-][A][S][H][R]]

Where:

filename.ext	Is the drive, path, file name and file extension of the file whose attributes are being enabled or disabled. You can include wildcards. If you do not specify a drive, the ATTRIB command uses the default drive. If you do not specify a path, the ATTRIB command uses the current directory.
+	Enables an attribute.
-	Disables an attribute.
A	Specifies the archive attribute.
S	Specifies the system attribute. A system file makes up part of the MS-DOS operating system.
H	Specifies the hidden attribute. You cannot see a hidden file when you use the DIR command.
R	Specifies the read-only attribute. You can read and execute a file; you cannot change or delete it.

Comments

You can type the attributes before or after the file name and file extension.

You can use either the + or the - with an attribute. You cannot use both at the same time with the same attribute.

|||| ATTRIB

Examples

Table 32-3 shows examples of the ATTRIB command.

Table 32-3 ATTRIB Command Examples

Command Line	Result
ATTRIB	Displays the ATTRIB help message.
ATTRIB MEMO.TXT	Displays the attributes of MEMO.TXT.
ATTRIB MEMO.TXT +H	Sets MEMO.TXT to hidden.
ATTRIB +H MEMO.TXT	Sets MEMO.TXT to hidden.
ATTRIB MEMO.TXT -S	Clears MEMO.TXT of the system attribute.
ATTRIB -S MEMO.TXT	Clears MEMO.TXT of the system attribute.
ATTRIB +H MEMO.TXT -S	Sets MEMO.TXT to hidden and clears it of the system attribute.
ATTRIB MEMO.TXT +ASHR	Sets MEMO.TXT to archived, system, hidden, and read-only.
ATTRIB MEMO.TXT +A+S+H+R	Sets MEMO.TXT to archived, system, hidden, and read only.
ATTRIB *.TXT +A +H +S +R	Sets all .TXT files to archived, hidden, system, and read-only.
ATTRIB *.TXT +A-H+S-R	Sets all .TXT files to archived and system, and clears them of the hidden and read-only attributes.
ATTRIB MEMO.TXT +SR -AH	Sets MEMO.TXT to system and read-only, and clears it of the archived and hidden attributes.



BACKUP

Purpose

To save files from one disk to another, use the external BACKUP command.

In addition to backing up files to local drives, the BACKUP command allows you to back up files to a network drive.

Format

BACKUP [filename.ext drv2:[\path2] [/A] [/S] [/M] [/D:dd-mm-yy]]

Where:

- | | |
|--------------|---|
| filename.ext | Is the drive, path, file name and file extension of the file you want to back up. If you do not specify a drive, the BACKUP command uses the default drive. If you do not specify a path, the BACKUP command uses the current directory. |
| drv2: | Is the destination drive to which you want to back up a file. The destination drive can be any drive on your workstation (Mdrive, hard disk drive, network drive, or diskette). |
| path2 | Is the path for the destination drive. If you do not specify a path, and you are backing up to a diskette, the BACKUP command uses the root directory. If you are backing up to a hard disk or the network, the subdirectory BKSUBDIR is created. |
| /A | Adds to the current contents of the back-up diskette. The /A qualifier does not erase existing files on the diskette. This qualifier has meaning only when you back up files to a diskette. |
| /S | Backs up subdirectories. |
| /M | Backs up only those files that were modified since the last backup. |
| /D:dd-mm-yy | Backs up only those files that were modified on or after the specified date. The date format only works for country code 001 (US).
dd is the day.
mm is the month.
yy is the year. |

||||| *BACKUP*

Comments

Using the BACKUP command, you can back up all files on all directories by typing one command.

If the destination disk for the back-up procedure is a hard disk, the BACKUP command adds more backup files to the existing backup files. Any files on a diskette are erased unless you specify the /A qualifier.

You can also use the BACKUP command to back up files to a subdirectory.

If you back up files to diskettes, you must have sufficient formatted diskettes for the number of files being backed up. If you use more than one diskette, be sure to label them in the order in which you will restore them.

You must run the RESTORE command before you can use the files you backed up.

Table 32-4 lists valid file specifications for the BACKUP command.

Table 32-4 BACKUP File Specifications

Specification	Meaning
*.DOC	Backs up all .DOC files in the current directory.
.	Backs up all files in the current directory.
TEST?.MEM	Backs up all .MEM files that start with the name TEST, such as, TEST.MEM, TEST1.MEM, TEST2.MEM, and TEST.MEM.
.	Backs up all files in the current directory.
..	Backs up all files in the directory above the current directory.
.	Backs up all files in the root directory of the current drive.
A:*.*	Backs up all files in the root directory of drive A.
A:\TEST\WHO*.*	Backs up all files in the subdirectory WHO of the directory TEST on drive A.

Example 1

To display the BACKUP help message, type:

A:\>BACKUP

Example 2

To back up all files in the current directory to drive A, type:

C:\>BACKUP *.* A:\

Insert back-up diskette 1 in drive A:
 WARNING: Files in DRIVE A: will be ERASED

Press any key when ready
 Backing up files to drive A
 Disk Number: 1

To see the files you saved using the BACKUP command, use the DIR command at the MS-DOS operating system prompt.

Example 3

To back up all files in all directories on drive C to drive A, type:

C:\>BACKUP C:*.* A: /S

Insert back-up diskette 1 in drive A:
 WARNING: Files in DRIVE A: will be ERASED

Press any key when ready
 Backing up files to drive A
 Disk Number: 1

||||| *BACKUP*

Example 4

To back up to diskettes all root directory files that were modified since the last backup, type:

```
C:\>BACKUP C:\*.* A: /M<Return>
```

```
Insert back-up diskette 1 in drive A:  
WARNING: Files in DRIVE A: will be ERASED
```

```
Press any key when ready  
Backing up files to drive A  
Disk Number: 1
```

Example 5

To back up the files in the root directory on drive A to network drive I, type:

```
A:\>BACKUP A:\*.* I:<Return>
```

```
Backing up files to drive I  
Disk Number: 1
```

```
.  
.  
.
```

BREAK

Purpose

To set or clear the Ctrl/C check, use the BREAK command. The BREAK command is an internal command.

Format

BREAK [ON | OFF]

Comments

If you run an application program that uses Ctrl/C, you can turn off the MS-DOS Ctrl/C function. When you do specify BREAK ON, pressing Ctrl/C affects the application program and not the MS-DOS operating system.

Specify the BREAK OFF command before you run an application program.

Specify the BREAK ON command after you run an application program and are using the MS-DOS operating system.

Example

To display the current setting of BREAK, type:

```
A:\>BREAK   
BREAK is off
```

```
A:\>
```



CHDIR

Purpose

To display a directory or change to another directory, use the CHDIR command. The CHDIR command is an internal command.

Format

CHDIR | CD [path]

Where:

path Is the path you want to change to.

Comments

You can display the path name to your current directory by typing the CHDIR command without parameters.

Example 1

To change from the root directory to the subdirectory \BIN, type:

```
A:\>CHDIR BIN 
```

```
A:\BIN>
```

Example 2

To change to the subdirectory \BIN\USER\JOE\FORMS, type:

```
A:\>CHDIR \BIN\USER\JOE\FORMS 
```

```
A:\BIN\USER\JOE\FORMS>
```

Example 3

To change to the directory above your current directory, type:

```
A:\>CHDIR .. 
```

```
A:\BIN\USER\JOE>
```

CHKDSK

Purpose

To scan a disk and check it for errors, use the CHKDSK command. The CHKDSK command is an external command.

Format

CHKDSK [filename.ext][/F][/V]

Where:

- filename.ext Is the drive, path, file name and file extension of the file you want to execute the CHKDSK command on. If you do not specify a drive, the CHKDSK command uses the default drive. If you do not specify a path, CHKDSK uses the current directory. If a file name is specified, CHKDSK indicates if the file is stored contiguously.
- /F Corrects errors found using CHKDSK. File(s) named FILE???.CHK that contain the lost links are then created in the specified disk's root directory.
- /V Lists all files in all the directories on the disk.

Comments

Do not use the CHKDSK command under MS-Windows.

Use CHKDSK periodically on each disk to check for errors in the directory. If errors are found, CHKDSK displays a message and a status report.

If you type a file name after CHKDSK, a status report is displayed for the disk and for the individual file.

You can redirect the output from CHKDSK to a file to save the status report. If you redirect CHKDSK output, do not use the /F qualifier.

NOTE

You cannot use the CHKDSK command with any network, ASSIGNED, or SUBSTED drives.



Example 1

To list all the files in all the directories on the default drive, type:

```
A:\>CHKDSK /V 
```

Information similar to the following information is displayed:

```
Volume VAXMATE      created Jan 1, 1986 9:00a
Directory A:\
  A:\ID.SYS
  A:\MSDOS.SYS
  A:\COMMAND.COM
Directory A:\SYS
Directory A:\SYS\DOS
  A:\SYS\DOS\ANSI.SYS
  .
  .
Directory A:\SYS\NET
  A:\SYS\NET\SHARE.EXE
  .
  .
```

Example 2

To display a CHKDSK status report, type:

```
C:\>CHKDSK 
```

```
21274624 bytes total disk space
 36864 bytes in 2 hidden files
 47104 bytes in 17 directories
8097792 bytes in 595 user files
13092864 bytes available on disk

655360 bytes total memory
594480 bytes free
```

Example 3

To store a CHKDSK status report in a file, type:

```
A:\>CHKDSK > STATUS.TXT 
```

CLS

Purpose

To clear the screen, use the CLS command. The CLS command is an internal command.

Format

CLS

Example

To clear the screen, type:

A:\> CLS

 **COMMAND****COMMAND***Purpose*

To start a new command processor, use the **COMMAND** command. The **COMMAND** command is an external command. The command processor is the MS-DOS operating system program that contains all the internal commands.

Format

COMMAND [drv:][\path][cttydev][/P][/C string]

Where:

- drv:** Is the drive containing the **COMMAND.COM** file. If you do not specify a drive, the **COMMAND** command uses the default drive.
- path** Is the path to the directory containing the **COMMAND.COM** file. If you do not specify a path, the **COMMAND** command uses the current directory.
- cttydev** Enables you to specify a different device for input and output.
- /P** Tells **COMMAND.COM** not to exit to any higher level.
- /C string** Tells the command processor to execute the command or commands specified by string and then return.

Comments

The COMMAND command loads a new command processor. It is loaded in two parts:

- The transient part, which an application program can write over
- The resident part, which remains in memory and that an application program cannot write over

Some application programs write over the transient part of the COMMAND.COM file when they run. When this occurs, the resident part of the command processor looks for the COMMAND.COM file. When resident part of the command processor finds the COMMAND.COM file, it reloads it.

Loading a new command shell decreases the free memory you have available.

IMPORTANT

If you use any terminate and stay resident programs, first exit from all spawned command shells. If you do not exit, the terminate and stay resident program uses considerably more memory than normal.

Example

To start a new command processor, and execute the CHKDSK command on drive A, and return to the first command processor, type:

```
A:\> COMMAND /C CHKDSK A: 
```



COPY

Purpose

To copy or append files, use the COPY command. The COPY command is an internal command.

To Copy Files

Format

```
COPY [/A | /B] filename1.ext  
      [/A | /B] [filename2.ext] [/A | /B][/V]
```

Where:

filename1.ext Is the drive, path, file name and file extension of the files you want to copy. If you do not specify a source drive, the COPY command uses the default drive. If you do not specify a path, the COPY command uses the current directory.

filename2.ext Is the drive, path, file name and file extension of the copied files. If you do not specify the destination drive, the COPY command uses the default drive. If you do not specify a path, the COPY command uses the current directory.

/A When used with the source file, the COPY command with the /A qualifier treats the files as an ASCII text file. Data in the file is copied up to, but not including, the first end-of-file character, (Ctrl/Z). The remainder of the file is not copied.

When used with the destination file, the COPY command with the /A qualifier adds an end-of-file character as the last character.

/B When used with the source file, the COPY command with the /B qualifier copies the entire file, including any end-of-file character.

When used with the destination file, the COPY command with the /B qualifier adds no end-of-file character.



/V Causes the MS-DOS operating system to verify that the sectors written on the destination diskette are recorded properly.

/V also causes the COPY command to copy more slowly because the MS-DOS operating system checks each entry recorded on the disk.

The **/A** and **/B** qualifiers each apply to the file name preceding it and to all remaining files on the command line until another **/A** or **/B** qualifier occurs.

Comments

If you do not specify the destination file name and file extension, the file is copied to the default drive with the original file name and file extension.

If you do not specify the destination file name and file extension, and the original file is on the default drive, the COPY command quits. You cannot copy files to themselves.

If you specify the destination drive, file name, and file extension, you can type it in one of three ways:

- You can type the destination drive. The COPY command copies the file to the specified drive. The copied file name is the same name as the original file name.
- You can type the destination file name and file extension. The COPY command copies the original file to a file on the default drive with the specified file name and file extension. In this case, the original file can also be on the default drive.
- You can type the destination drive, file name, and file extension. The COPY command copies the original file to the specified drive and gives it the new file name and file extension.

Example 1

To copy REPORT.TXT in the default directory on drive C to the default drive, type:

```
A:\> COPY C:REPORT.TXT   
1 File(s) copied
```

```
A:\>
```

|||| COPY

Example 2

To copy REPORT.TXT to drive C, type:

```
A:\>COPY REPORT.TXT C:   
1 File(s) copied
```

A:\>

Example 3

To make a copy of MEMO.TXT and name it LETTER.TXT, type:

```
A:\>COPY MEMO.TXT LETTER.TXT   
1 File(s) copied
```

A:\>

Example 4

To copy MEMO.TXT to drive C and name it UPDATE.TXT, type:

```
A:\>COPY MEMO.TXT C:UPDATE.TXT   
1 File(s) copied
```

A:\>

Example 5

To copy all the files in \BIN\USERS\JOE to \ACCOUNTS, type:

```
A:\>COPY \BIN\USERS\JOE \ACCOUNTS   
A:\BIN\USERS\JOE\COMMAND.COM  
A:\BIN\USERS\JOE\CONFIG.SYS  
A:\BIN\USERS\JOE\AUTOEXEC.BAT  
3 File(s) copied
```

A:\>

To Append Files

Format

```
COPY [/A | /B] filename1.ext [/A | /B]
+ filename2.ext [/A | /B] + [...]
filename3.ext [/A | /B] [/V]
```

Where:

filename1.ext Is the drive, path, file name and file extension of the file you want to append. If you do not specify a source drive, the COPY command uses the default drive. If you do not specify a path, the COPY command uses the current directory.

filename2.ext Is the drive, path, file name and file extension of the file you want to append. If you do not specify a source drive, the COPY command uses the default drive. If you do not specify a path, the COPY command uses the current directory.

filename3.ext Is the drive, path, file name and file extension of the appended files. If you do not specify a destination drive, the COPY command uses the default drive. If you do not specify a path, the COPY command uses the current directory.

/A When used with the source file, the COPY command with the /A qualifier treats the file as an ASCII text file. Data in the file is copied up to, but not including, the first end-of-file character, (Ctrl/Z). The rest of the file is not copied.

When used with the destination file, the COPY command with the /A qualifier adds an end-of-file character as the last character.

/B When used with the source file, the COPY command with the /B qualifier copies the entire file, including any end-of-file character.

When used with the destination file, the COPY command with the /B qualifier adds no end-of-file character.

|||| COPY

/V Causes the MS-DOS operating system to verify that the sectors written on the destination diskette are recorded properly.

/V also causes the COPY command to run more slowly because the MS-DOS operating system checks each entry recorded on the disk.

The **/A** and **/B** qualifiers each apply to the file name preceding it and to all remaining files on the command line until another **/A** or **/B** qualifier occurs.

Comments

The COPY command enables you to append files while copying. You can list any number of files as parameters to the COPY command, separated by plus signs (+).

You can use wildcards with COPY to append files.

You cannot append two files together if any source file other than the first source file has the same name as the destination file. The problem occurs because the original file is overwritten by the new file.

When you append files, the default qualifier is **/A**.

Example 1

To append A.XYZ, B.MEM, and C:C.TXT into a file named BIGFILE.TXT on the default drive, type:

```
A:\>COPY A.XYZ + B.MEM + C:C.TXT BIGFILE.TXT Return  
A.XYZ  
B.MEM  
C:C.TXT  
      1 File(s) copied
```

```
A:\>
```

Example 2

To append all .LST files into a file named COMBIN.PRN, type:

```
A:\> COPY *.LST COMBIN.PRN   
ONE.LST  
TWO.LST  
THREE.LST  
          1 File(s) copied
```

A:\>

Example 3

To append each .LST file with its corresponding .REF file into a .PRN file, type:

```
A:\> COPY *.LST + *.REF *.PRN   
ONE.LST  
ONE.REF  
TWO.LST  
TWO.REF  
THREE.LST  
THREE.REF  
          3 File(s) copied
```

A:\>

NOTE

If a .LST file exists, but its corresponding .REF file does not exist, the COPY command makes a copy of the .LST file and gives it the .PRN file extension.

If a .LST file does not exist, but its corresponding .REF file does exist, the COPY command does not append any files.



Example 4

To append all .LST files, and then all .REF files, into one file named COMBIN.PRN, type:

```
A:\> COPY *.LST + *.REF COMBIN.PRN   
ONE.LST  
TWO.LST  
THREE.LST  
ONE.REF  
TWO.REF  
THREE.REF  
1 File(s) copied
```

A:\>

Example 5

To append A.COM (plus the end-of-file character), B.XYZ (to the first end-of-file character), and C:C.TXT into a file named BIGFILE.TXT, type:

```
A:\> COPY A.COM/B + B.XYZ/A + C:C.TXT BIGFILE.TXT   
A.COM  
B.XYZ  
C:C.TXT  
1 File(s) copied
```

A:\>

Example 6

To update the time and date for the file MEMO.TXT, type:

```
A:\> COPY MEMO.TXT+,,   
MEMO.TXT  
1 File(s) copied
```

A:\>

CTTY

Purpose

To change the device from which you issue commands, use the CTTY command. The CTTY command is an internal command. TTY represents the console.

Format

CTTY device

Where:

device Is the device from which you supply commands to the MS-DOS operating system.

Example 1

To move all command input/output (I/O) from the console to the AUX port, type:

```
A:\> CTTY AUX 
```

Example 2

To move I/O back to the console from the device on the AUX port, type:

```
A:\> CTTY CON 
```



DATE

Purpose

To enter or change the date, use the DATE command. The DATE command is an internal command.

Format

DATE [mm-dd-[yy]yy]

Where:

mm Is the month (1, 2, . . . , 12).

dd Is the day (1, 2, . . . , 31).

yy Is the year (80, 81, . . . , 99; or 1980, 1981, . . . , 2099).

Comments

You can change the date from your workstation or from a batch file.

The date format shown is for the United States. The form for the DATE command depends on the country specified in the CONFIG.SYS file.

If you type parameters after the DATE command, use numerals only.

You can separate the month, day, and year entries by:

- hyphens (-)
- periods (.)
- slashes (/)

The MS-DOS operating system changes months and years correctly, whether the month has 31, 30, 29, or 28 days. The MS-DOS operating system also handles leap years.

Example 1

To set a new date, type:

A:\>DATE

Current date is Wed 1-01-1986

Enter new date (mm-dd-yy):

You can type a new date, or press the Return key if you desire no changes.

Example 2

To set the new date to March 1, 1986, type:

A:\>DATE 3-1-86

A:\>



DEL

Purpose

To delete files from a directory, use the DEL command. The DEL command is an internal command. You can also use the ERASE command to erase files.

Format

DEL filename.ext

Where:

filename.ext Is the drive, path, file name and file extension of the file you want to delete. If you do not specify a drive, the DEL command uses the default drive. If you do not specify a path, the DEL command uses the current directory. If you specify a directory path but no file name, all files in that directory are deleted.

Comments

If you want to delete all files in the directory or in a subdirectory, the DEL command prompts you for a 'Y' or 'N' response.

Example

To delete the file MEMO.TXT on drive A, type:

```
A:\>DEL MEMO.TXT 
```

```
A:\>
```

DIR

Purpose

To display a list of files in a directory, use the DIR command. The DIR command is an internal command.

Format

DIR [filename.ext][/P][/W]

Where:

- | | |
|--------------|--|
| filename.ext | Is the drive, path, file name and file extension of the files you want displayed. If you do not specify a drive, the DIR command uses the default drive. If you do not specify a path, the DIR command uses the current directory. |
| /P | Selects page mode. When you use the /P qualifier, the directory display pauses after the screen is filled. To resume the display of output, press any key. |
| /W | Selects wide display. When you use the /W qualifier, only file names are displayed. The file size and the time and date of the last modification are not displayed. File names are displayed five to a line. |

Comments

When you use the DIR command, files are listed with the size, the time, and the date of their last modification.

The directory date and time formats are dependent on the country specified in the CONFIG.SYS file.

You can use the wildcard characters ? and * in the file name option. Table 32-5 lists the DIR command equivalents.



Table 32-5 DIR Command Equivalents

Command	? Equivalent	* Equivalent
DIR	DIR ????????.???	DIR * *
DIR FILENAME	DIR FILENAME.???	DIR FILENAME.*
DIR .EXT	DIR ????????.EXT	DIR *.EXT
DIR .	DIR ????????.	DIR *.*

Example 1

To display all the files on the default directory, type:

```
A:\>DIR 
```

Example 2

To display all the files in the subdirectory \BIN\USERS, type:

```
A:\>DIR \BIN\USERS 
```

Example 3

To display all the files in the default directory on drive C, type:

```
A:\>DIR C: 
```

Example 4

To display all files named MEMO on the default drive, type:

```
A:\>DIR MEMO 
```

```
Volume in drive A is DOS
```

```
Directory of A:\
```

```
MEMO    LST      145   2-05-86  12:58p
MEMO    TXT      598   2-08-86   9:10a
        2 File(s)  1173011 bytes free
```

```
A:\>
```

DISKCOPY

Purpose

To make an image copy of a diskette, use the DISKCOPY command. The DISKCOPY command is an external command.

Format

DISKCOPY [drv1: [drv2:]]

Where:

drv1: Is the source drive containing the diskette to be copied.

drv2: Is the destination drive containing the diskette to which files are copied.

Comments

The DISKCOPY command makes multiple passes to copy a diskette. More passes are required if you are running MS-Windows and other applications.

Because your workstation has a double-sided 96-track per inch (TPI) drive, you can copy any single- or double-sided 8-, 9-, or 15-sector per track diskette. You can also copy RX50 diskettes, but the destination diskette must be formatted on a Rainbow computer first. Diskettes copied on a 96-TPI drive may not be readable by 48-TPI drives.

The DISKCOPY command formats the destination diskette if its format is not the same as the source diskette.

If you specify drive A as the source drive, and drive B as the destination drive, the DISKCOPY command prompts you to insert a diskette into drive A.

If you specify drive A as the source drive, but specify no destination drive, the DISKCOPY command assumes you are copying from drive A to drive A.

NOTE

You cannot use the DISKCOPY command with remote network resources.

||||| *DISKCOPY*

Example 1

To display the DISKCOPY help message, type:

A:\>DISKCOPY

Example 2

To copy the contents of a diskette in drive A to a new diskette, type:

A:\>DISKCOPY A: A:

Diskcopy Utility Program Version 1.00

(C) Copyright 1985, 1986 by Digital Equipment Corporation

Insert source disk into drive A: and press <Return> when ready.

Copying 80 tracks, 2 side(s), 15 sectors per track.

Insert target disk into drive A: and press <Return> when ready.

A:\>

ECHO

Purpose

To turn the echo feature on or off, use the ECHO command. The ECHO command is an internal command.

Format

ECHO [ON | OFF | message]

Where:

message Is a message you want displayed.

Comments

Normally, when the command processor sees commands in a batch file, it displays them on the screen. The ECHO OFF command turns off this feature. The ECHO ON command turns this feature back on.

Example 1

To disable the display of commands in a batch file, type:

```
A: \> ECHO OFF 
```

Example 2

To enable the display of commands in a batch file, type:

```
A: \> ECHO ON 
```

||||| ECHO

Example 3

To display the current setting of the ECHO command, type:

```
A:\>ECHO   
ECHO is on
```

```
A:\>
```

Example 4

To display the message "This is a VAXmate workstation" from a batch file, add the following line to your batch file:

```
ECHO This is a VAXmate workstation
```

EDLIN

Purpose

EDLIN is a line editor designed to edit ASCII files. EDLIN is an external command.

Format

EDLIN filename.ext

Where:

filename.ext Is the drive, path, file name and file extension of the file you want to edit. If you do not specify a drive, the EDLIN command uses the default drive. If you do not specify a path, the EDLIN command uses the current directory.

Comments

Table 32-6 list the EDLIN commands.

Table 32-6 EDLIN Commands

Command	Purpose
Number	Edits a line number.
A	Appends lines.
C	Copies lines.
D	Deletes lines.
E	Ends editing.
I	Inserts lines.
L	Lists text with line numbers.
M	Moves lines.
P	Pages text.
Q	Quits editing.
R	Replaces lines.
S	Searches text.
T	Transfers text.
W	Writes lines.



ERASE

Purpose

To delete files from a specified directory, use the ERASE command. The ERASE command is an internal command. You can also use the DEL command to erase files.

Format

ERASE filename.ext

Where:

filename.ext Is the drive, path, file name and file extension of the file you want to erase. If you do not specify a drive, the ERASE command uses the default drive. If you do not specify a path, the ERASE command uses the current directory.

Example

To remove MYFILE.TXT from drive A, type:

```
A:\>ERASE MYFILE.TXT 
```

```
A:\>
```

EXE2BIN

Purpose

To convert .EXE files to binary format, use the EXE2BIN command. The EXE2BIN command is an external command.

Format

EXE2BIN filename1[.ext] [filename2.ext]

Where:

filename1.ext Is the drive, path, file name and file extension of the file you want to convert. If you do not specify a file extension for the input file, the default file extension is .EXE. If you do not specify a drive, the EXE2BIN command uses the default drive. If you do not specify a path, the EXE2BIN command uses the current directory.

filename2.ext Is the drive, path, file name and file extension of the created file. If you do not specify a file name, the EXE2BIN command uses the original .EXE file name. The new file extension is .BIN. If you do not specify a drive, the EXE2BIN command uses the default drive. If you do not specify a path, the EXE2BIN command uses the current directory.

Comments

Binary files are smaller than .EXE files and load faster.

The input file is converted to binary file format (memory image of the program) and placed in the output file.

The input file must be in valid .EXE format produced by the linker. The resident code and data part of the file must be less than 64K bytes.

There must be no stack segment.



EXE2BIN

Two conversions are possible, depending on whether the initial CS:IP (Code Segment:Instruction Pointer) is specified in the .EXE file:

- If you do not specify CS:IP in the EXE file, the EXE2BIN command assumes a pure binary conversion. If segment fixups are necessary, you are prompted for the fixup value. This value is the absolute segment at which the program is to be loaded. The resulting program is usable only when it is loaded at the absolute memory address specified by a user application. The command processor is not capable of properly loading the program.
- If you specify CS:IP as 0000:100H, the EXE2BIN command assumes that the file is to run as a .COM file, with the location pointer set at 100H by the assembler statement ORG. The first 100H bytes of the file are deleted. No segment fixups are allowed, because .COM files must be segment relocatable. Once the conversion is complete, you can rename the resulting file with a .COM file extension. Then the command processor is able to load and execute the program in the same way as the .COM programs supplied on your MS-DOS disk.

Example

To convert TEST.EXE to TEST.BIN, type:

```
A:\>EXE2BIN TEST.EXE 
```

```
A:\>
```

EXIT

Purpose

To exit from COMMAND.COM and return to a previous level, use the EXIT command. The EXIT command is an internal command.

Format

EXIT

Comments

If you execute COMMAND.COM while in MS-Windows, you have to use the EXIT command before you return to MS-Windows.

You can use the EXIT command when you are running an application program and want to start the MS-DOS command processor, then return to your program.

Example

To close the COMMAND.COM file after executing it, type:

```
A:\> EXIT 
```

```
A:\>
```

To return to the MS-DOS Executive window, expand the MS-DOS Executive window icon.



FC

Purpose

To compare two text files, or two binary files, use the FC command. The FC command is an external command.

Format

FC [[/A /B /C /L /N /T /W /NNN][[/LB n] filename1.ext filename2.ext]

Where:

- /A** Abbreviates the output of an ASCII comparison. Only the beginning and ending lines in each set of differences are displayed. The intermediate lines are represented by ellipses.
- /B** Specifies a binary compare of the two files. The two files are compared byte to byte, with no attempt to resynchronize after a mismatch. The FC command displays the relative address of the pair of bytes, followed by the mismatched bytes from file1 and file2. If you do not specify this qualifier, the compare is done line by line.
- /C** Ignores the case of letters. All letters in both files are considered as capital letters.
- /L** Compares the files in ASCII mode. /L is the default when you compare files that do not have file extensions of .EXE, .COM, .SYS, .OBJ, .LIB, or .BIN.
- /N** Displays the line numbers during an ASCII comparison.
- /T** Does not expand tabs to spaces. The default is to treat tabs as 8 spaces.
- /W** Compresses tabs and spaces during the comparison. Tabs and spaces are considered as a single white space. Beginning and ending white space is ignored.
- /NNN** Is a number from 1 to 9. This number specifies the number of required, matching lines for the files to be considered matching again after a difference is found. If you do not specify a number, the default is 2.

- /LB n Sets the internal line buffer to “n” lines. The default internal buffer length is 100 lines. Files that have more than this number of consecutive, differing lines abort the file comparison.
- filename1.ext Is the drive, path, file name and file extension of the first file in the compare. If you do not specify a drive, the FC command uses the default drive. If you do not specify a path, the FC command uses the current directory.
- filename2.ext Is the drive, path, file name and file extension of the second file in the compare. If you do not specify a drive, the FC command uses the default drive. If you do not specify a path, the FC command uses the current directory.

Comments

The default compare is line by line.

You can redirect output to a file.

Example 1

To display the FC help message, type:

A:\>FC

Example 2

To compare TEST1.TXT and TEST2.TXT, type:

A:\>FC TEST1.TXT TEST2.TXT

|||| FC

Example 3

To compare TEST1.TXT and TEST2.TXT and specify that four lines constitute a match, type:

A:\>FC /4 TEST1.TXT TEST2.TXT

Example 4

To perform a binary compare of TEST1.TXT and TEST2.TXT, type:

A:\>FC /B TEST1.TXT TEST2.TXT

Example 5

To compare TEST1.TXT and TEST2.TXT and send the output to DIFFER.TXT, type:

A:\>FC TEST1.TXT TEST2.TXT > DIFFER.TXT

FDISK

Purpose

To prepare a hard disk for use, and to add or delete partitions, use the FDISK command. The FDISK command is an external command. Specifically, the FDISK command enables you to:

- Set the drive type
- Initialize your hard disk
- Add or delete a partition
- Set the start-up partition
- Prepare the drive for shipping
- Select network start up priority

Format

FDISK

Comments

The FDISK command displays menus from which you make selections. You see different menus based on different system configurations.

You can have one to four partitions on the hard disk *but*, you can only have one MS-DOS start-up partition. You cannot have an MS-DOS partition larger than 32 megabytes, or the size of the hard disk, whichever is smaller.

You choose partition sizes as a percentage of the overall storage capacity of the hard disk. The FDISK command indicates the percentage of the overall storage capacity still unused.

Initializing the hard disk initializes the boot code and partition table and initializing the hard disk erases all data stored on the hard disk. Deleting a partition erases all data stored on that partition.

Example

To start the FDISK command, type:

```
A:\>FDISK 
```



FIND

Purpose

To search for a string of text in a file or files, use the FIND command. The FIND command is an external command.

Format

FIND [/V][/C][/N] "string" filename.ext [...]

Where:

- | | |
|---------------------|---|
| /V | Displays all lines not containing the specified string. |
| /C | Prints only the count of lines that contained a match in each of the files. |
| /N | Displays each line preceded by its relative line number in the file. |
| string | Is the string you want to find. |
| filename.ext | Is the drive, path, file name and file extension of the file being searched. If you do not specify a drive, the FIND command uses the default drive. If you do not specify a path, the FIND command uses the current directory. |

Comments

The search is case sensitive. Type the exact string you want to find.

The FIND command searches for a specified string in a specified file or series of files. The FIND command displays all lines in the specified files containing the specified string.

If no files are specified, the FIND command takes the input on the screen and displays all lines containing the specified string.

The string should be enclosed in double quotes. Place double quotes around a string that already has quotes in it.

Example 1

To display all the lines containing "VAXmate" in BOOK1.TXT and BOOK2.TXT (in that order), type:

A:\>FIND "VAXmate" BOOK1.TXT BOOK2.TXT

```
----- book1.txt
read into memory when you turn on your VAXmate workstation.
is discussed in the VAXmate System Handbook.
Local directories on your VAXmate workstation
```

```
----- book2.txt
A VAXmate workstation MS-DOS diskette may have either 40-tracks
Rainbow-compatible diskettes cannot be formatted on the VAXmate
The program remains resident until you turn off the VAXmate
```

A:\>

Example 2

To display the lines and relative line numbers that contain the word "computer" in TEST1.TXT and TEST2.TXT, type:

A:\>FIND /N "computer" TEST1.TXT TEST2.TXT

```
----- test1.txt
[1]Turn on your computer.
[3]A printer is supplied with your computer.
[5]Plug the cable into the port marked "printer."
```

```
----- test2.txt
[2]The computer screen displays the operating system prompt.
[4]Connect your printer to the computer using the cable provided.
[6]You have successfully connected the printer to your computer.
```

A:\>

||||| *FIND*

Example 3

To display all the lines that do not contain the word "computer" in TEST1.TXT and TEST2.TXT, type:

A:\>FIND /V "computer" TEST1.TXT TEST2.TXT

----- test1.txt

These
lines
do
not

----- test2.txt

contain
the
word

A:\>

Example 4

To display the number of lines that contain the word "computer" in TEST1.TXT and TEST2.TXT, type:

A:\>FIND /C "computer" TEST1.TXT TEST2.TXT

----- test1.txt: 3

----- test2.txt: 3

A:\>

FONT

Purpose

To load a text font file into memory, use the FONT command. The FONT command, an external command, loads text font files that correspond to a specific character set. These font files only affect your screen display.

Format

FONT [[filename[.ext]] [/D] [/S]]

Where:

filename.ext Is the drive, path, file name and file extension of the font file. If you do not specify a drive, the FONT command uses the default drive. If you do not specify a path, the FONT command searches the current directory, any appended directories, the root directory, or the current search path. If you do not specify a file extension, .FNT is used.

/D Loads the default character set.

/S Displays the current font file.

Comments

The FONT command affects only the character set displayed in text mode. For more information on graphics mode, see the GRAFTABL command in this chapter. For more information on text and graphics modes, see the MODE command in this chapter.

If the MS-DOS operating system finds the .FNT file in a valid font file format, the font is loaded. Unless you are in a window, the entire screen and video memory immediately reflect the font change because this command affects text fonts. MS-Windows operates in graphics mode, so nothing happens to the screen if you are in a window.

If the .FNT file does not exist or is not in the proper format, a message is displayed.

The FONT command does not check that the font, keyboard, and country-specific information match. If they do not match, the results are unpredictable.

||||| *FONT*

The FONT command determines whether the correct hardware and software exist to support the loading of font files. If the hardware and software are not correct, a message is displayed. This message describes the minimal hardware requirement to run the program.

Example 1

To display the FONT help message, type:

A:\>FONT

Example 2

To load MCS.FNT, type:

A:\>FONT MCS

FONT Utility Program Version 1.00
(C) Copyright 1985, 1986 by Digital Equipment Corporation

MCS.FNT

Has been successfully loaded

A:\>

Example 3

To load the default character set (STD.FNT), type:

A:\>FONT /D

FONT Utility Program Version 1.00
(C) Copyright 1985, 1986 by Digital Equipment Corporation

The default font "STD.FNT" has been successfully loaded

A:\>

Example 4

To display the current font file, type:

A:\>FONT /S

FONT Utility Program Version 1.00

(C) Copyright 1985, 1986 by Digital Equipment Corporation

Font file = STD.FNT

A:\>



FOR

Purpose

To repeatedly execute an MS-DOS command in a batch file or at the MS-DOS prompt, use the FOR command. The FOR command is an internal command.

Format

For batch processing (in a .BAT file):

```
FOR %%variable1 IN set DO command [variable2]
```

For interactive processing (at the MS-DOS prompt):

```
FOR %variable1 IN set DO command [variable2]
```

Where:

variable1	Is any number or letter.
set	Is a series of file names, a file specification containing wild-cards, or a count pattern.
command	Is any MS-DOS operating system command.
variable2	Is the same character as variable1. Specify variable2 if the command requires a parameter.

Comments

The %%variable1 is set sequentially to each member of set, and then command is evaluated.

If a member of set is an expression involving * or ?, the variable is set to each matching pattern from the disk. In this case, only one item can be in the set, and any item other than the first is ignored.

Example 1

To execute from a batch file the MASM command on all your .ASM files, add this line to your .BAT file:

```
FOR %%f IN (*.ASM) DO MASM %%f
```

Example 2

To execute from the MS-DOS prompt the MASM command on all your .ASM files, type:

```
FOR %f IN (*.ASM) DO MASM %f
```

Example 3

To execute from a batch file the TYPE command on all your .TXT files, add this line to your .BAT file:

```
FOR %%f IN (*.TXT) DO TYPE %%f
```

Example 4

To execute from the MS-DOS prompt the TYPE command on all your .TXT files, type:

```
A:\>FOR %f IN (*.TXT) DO TYPE %f
```



FORMAT

Purpose

To format diskettes and hard disks, use the **FORMAT** command. The **FORMAT** command is an external command.

Format

FORMAT [drv:] [/S][/V][/1][/4][/8]

Where:

- drv:** Is the drive you want to format.
- /S** Writes **IO.SYS**, **MSDOS.SYS**, and **COMMAND.COM** to the newly formatted disk.
- /V** Prompts you for a volume label at the conclusion of the format process.
- /1** Formats a diskette to be single-sided (this is disregarded on a single-sided drive).
- /4** Formats an 8- or 9-sector, double-sided diskette in a high-capacity drive.

We recommend that you do not format 8- and 9-sector diskettes on your VAXmate workstation if you plan to use these diskettes in a low-capacity drive.
- /8** Formats the diskette with 8 sectors per track. The default is 9 sectors for low-capacity diskettes and 15 sectors for high-capacity diskettes.

Comments

The VAXmate workstation has a 5¹/₄ inch, high-capacity diskette drive. The recommended diskette type is a 1.2 megabyte high-density, double-sided diskette.

Each sector is 512 bytes long, and you can format 8, 9, or 15 sectors per track on a diskette, depending on the density (tracks per inch) of the diskette.

You cannot format Rainbow-compatible diskettes on the workstation. Format them on a Rainbow computer.

Because the diskette drive cannot tell what type of diskette is being formatted, you must use the proper FORMAT command qualifiers. Do not format:

- High-capacity diskettes to be low-capacity format
- Low-capacity diskettes to be high-capacity format

You can enter qualifiers in any order.

Qualifiers that you do not enter are set to the default values. The default values are:

- 15 sectors per track
- Double-sided

NOTE

You cannot use the FORMAT command to format any network, ASSIGNed, or SUBSTed drives.

||||| *FORMAT*

Example 1

To display the FORMAT help message, type:

A:\>FORMAT

Example 2

To format a diskette in drive A, type:

A:\>FORMAT A:

Format Utility Program Version 1.00

(C) Copyright 1985, 1986 by Digital Equipment Corporation

WARNING! THIS PROGRAM WILL DESTROY ANY DATA CURRENTLY ON YOUR DISK!

Type <Ctrl/C> to quit

Insert new diskette for drive A:
and press <Return> when ready

Formatting 80 tracks, 2 side(s), 15 sectors per track.

Formatting and verifying track

Volume label (11 characters, <Return> for none)?

1213952 bytes total disk space

1213952 bytes available on disk

Format another (Y/N)?

A:\>

GOTO

Purpose

To jump to a specified label in a batch file, use the GOTO command. The GOTO command is an internal command.

Format

GOTO label

Where:

label Is the label in a batch file to jump to.

Comments

The GOTO command cannot be used at the MS-DOS operating system prompt.

If you do not specify a label, the batch file stops executing.

Example

In the following example, program execution jumps from GOTO TWO to REM SECOND PROGRAM:

```
:ONE
REM FIRST PROGRAM
GOTO TWO
.
.
.
:TWO
REM SECOND PROGRAM
```



GRAFTABL

Purpose

To load a graphic font file into memory, use the GRAFTABL command. The GRAFTABL command, an external command, loads a graphic font file that corresponds to a graphic character set.

Format

GRAFTABL [filename[.ext]]

Where:

filename.ext Is the drive, path, file name and file extension of the graphic font file. If you do not specify a drive, the GRAFTABL command uses the default drive. If you do not specify a path, the GRAFTABL command searches the current directory, any appended directories, the root directory, or the current search path. If you do not specify a file name or file extension, the GRAFTABL command uses the current text font file name with a .GRF file extension.

Comments

Exit from MS-Windows before using the GRAFTABL command.

The GRAFTABL command affects only the character set displayed in graphics mode. For more information on text mode, see the FONT command in this chapter. For more information on text and graphics modes, see the MODE command in this chapter.

If the .GRF file does not exist or is not in the proper format, a message is displayed.

GRAFTABL uses approximately 2K bytes of memory.

Example 1

To load the graphic character set that corresponds to the current text font file (STD.FNT in this example), type:

```
A:\>GRAFTABL 
```

```
Graphic Character Loader Version 1.00
(C) Copyright 1985, 1986 by Digital Equipment Corporation
Replacing the graphic character set with STD.GRF
A:\>
```

Example 2

To load the graphic character set that corresponds to the ISO Latin-1 text font file, type:

```
A:\>GRAFTABL ISO 
```

```
Graphic Character Loader Version 1.00
(C) Copyright 1985, 1986 by Digital Equipment Corporation
Replacing the graphic character set with ISO.GRF
A:\>
```

Example 3

To load the graphic character set that corresponds to the French text font file, type:

```
A:\>GRAFTABL FR7.GRF 
```

```
Graphic Character Loader Version 1.00
(C) Copyright 1985, 1986 by Digital Equipment Corporation
Replacing the graphic character set with FR7.GRF
A:\>
```

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GRAPHICS

Purpose

To print graphic video images on a graphics printer, use the GRAPHICS command. For example, to print MS-Windows screens or any application that has graphic video images, use the external GRAPHICS command.

Format

GRAPHICS [printer type][/R]

Where:

printer type Is STD, LA50, LA75 or LA75STD, LA75DEC, LN03, LN03DEC, LN03STD.

/R Prints exact graphics video images. If the screen has black video images with a white background, the printer produces black images with a white background. If the screen has white video images with a black background, the printer produces white images with a black background.

Comments

Exit from MS-Windows before loading the GRAPHICS command.

Once you load GRAPHICS, you can print the current graphic video screen from MS-Windows by pressing the Shift/Prt Sc keys.

Each time you change printers or set the reverse qualifier, you must load the GRAPHICS command again.

LN03STD and LN03DEC are reserved for an LN03 Plus printer with the LN03 Plus ISO/PC cartridge.

GRAPHICS uses approximately 2K bytes of memory.

To obtain high-quality prints, the GRAPHICS command causes printers in high-resolution video mode to print the upper-right corner of the screen on the upper-left corner of the paper (landscape mode).



GRAPHICS

There are two ways to set the printer type:

- If you used the MODE command to set the printer type, type the GRAPHICS command without the parameter or the qualifier. The GRAPHICS command reads the printer setting in memory.
- If you have not used the MODE command to set the printer type, type the GRAPHICS command with the appropriate printer type.

The GRAPHICS program stops if there is:

- No paper in the printer
- An input/output (I/O) error during the print operation
- A timeout

If a timeout occurs while the printer is in graphics mode, the printer remains in graphics mode. To reset an LN03, LN03DEC, LA50, or LA75DEC printer, turn the printer off or complete the graphic printout.

Example 1

To display the GRAPHICS help message, if you have not set the printer type using the MODE command, type:

```
A:\>GRAPHICS 
```

Example 2

To set the printer type using the MODE command, then load GRAPHICS, type the following sequence of commands:

```
A:\>MODE PRN:LA75 
```

```
A:\>GRAPHICS 
```

```
GRAPHICS Utility Program Version 1.00
```

```
(C) Copyright 1985, 1986 by Digital Equipment Corporation
```

```
Printer type LA75
```

```
Reverse print is OFF.
```

```
Loading GRAPHICS.
```

```
A:\>
```

Example 3

To change the printer from an LA75 printer to an LN03 Plus printer, type:

```
A:\>GRAPHICS LN03   
GRAPHICS Utility Program Version 1.00  
(C) Copyright 1985, 1986 by Digital Equipment Corporation
```

```
Printer type LN03  
Reverse print is OFF.  
Loading GRAPHICS.
```

```
A:\>
```

Example 4

To change the printer to an LN03 Plus printer and set the reverse qualifier, type:

```
A:\>GRAPHICS LN03 /R   
GRAPHICS Utility Program Version 1.00  
(C) Copyright 1985, 1986 by Digital Equipment Corporation
```

```
Printer type LN03  
Reverse print is ON.  
Loading GRAPHICS.
```

```
A:\>
```




IF

Purpose

To conditionally execute commands in a batch file, use the IF command. The IF command is an internal command.

Format

IF <condition> <command>

Where:

<condition> ERRORLEVEL <number>

True if, and only if, the previous program executed by the command processor (COMMAND.COM) had an exit code of <number> or higher. An exit code is set by a specific program. It is returned by the operating system after the program finishes. Later program tasks may be performed based on the value of this number.

<string1> == <string2>

True if, and only if, <string1> and <string2> are identical after parameter substitution. Strings cannot have embedded separators.

EXIST <filename>

True if, and only if, <filename> exists.

NOT <condition>

True if, and only if, <condition> is false.

<command> Is the command executed if the condition is true.

Comments

The IF command cannot be used at the MS-DOS operating system prompt.

The IF command enables you to conditionally execute commands from a batch file. When <condition> is true, <command> is executed. Otherwise, <command> is ignored.

Example

To display the message “Can’t find datafile” if DATA1 does not exist, type:

```
IF NOT EXIST DATA1 ECHO Can't find datafile
```



JOIN

Purpose

To create a single directory structure from two separate disk drives, use the JOIN command. The external JOIN command lets the disk contents be accessed as though that disk contents were in the subdirectory of another disk. In effect the drive that gets JOINed becomes a subdirectory of the drive to which it is JOINed. You must specify a name for this subdirectory.

Format

JOIN [drv1: drv2:\path2]

JOIN drv1: /D

Where:

drv1: Is the drive you want to join to another drive. Drv1: is a physical drive.

drv2: Is the drive to which the first drive is joined.

path2 Is the path of the drive to which the first drive is joined. Path2 must be a subdirectory that is nonexistent or empty.

/D Deassigns a JOINed drive.

Comments

You can only join drv:1 at its root directory.

NOTE

You cannot use the JOIN command with any network, ASSIGNed, or SUBSTed drives.

After you issue the JOIN command, the first drive name becomes invalid. If you try to use it, the MS-DOS operating system displays a message.

If you use the JOIN command with the /D qualifier, the JOINed drives are deassigned, but any created subdirectory is not deleted.

Example 1

To join drive A to the path C:\MEMOS, type:

```
C:\MEMOS>JOIN A: C:\MEMOS 
```

```
C:\MEMOS>
```

Example 2

To display a directory listing of drive A that was joined to drive C:\MEMOS, type:

```
C:\MEMOS>DIR C:\MEMOS 
```

Example 3

To display joined drives, type:

```
C:\MEMOS>JOIN 
```

```
A: => C:\MEMOS
```

```
C:\MEMOS>
```

Example 4

To deassign the effects of a previous JOIN command, type:

```
C:\MEMOS>JOIN A: /D 
```

```
C:\MEMOS>
```



KEYB

Purpose

To load a keyboard map file into memory, use the KEYB command. The external KEYB command maps the character set, STD, to a keyboard layout.

Format

KEYB [filename[.ext]] [/D] [/S]

Where:

filename.ext Is the drive, path, file name and file extension of the keyboard map file. If you do not specify a drive, the KEYB command uses the default drive. If you do not specify a path, the KEYB command searches the current directory, any appended directories, the root directory, or the current search path. If you do not specify a file extension, .KEY is used.

/D Loads the default keyboard map file.

/S Displays the name of the current keyboard map file.

Comments

If the MS-DOS operating system finds the file and it is a valid keyboard map file, the KEYB program loads the file into memory. The changes are implemented immediately.

The KEYB command does not check that the font, keyboard, and country-specific information match. If they do not match, the results are unpredictable.

If the .KEY file does not exist or is not in the proper format, a message is displayed.

If you do not specify a file name, the KEYB command displays an informational help screen.

Pressing the Ctrl/Alt/F2 keys changes the currently loaded keyboard file to the standard keyboard file STDUS.

Pressing the Ctrl/Alt/F3 keys changes the current keyboard file to the last keyboard file loaded into memory. To activate this feature, a nonstandard keyboard, such as STDFR.KEY, should have been loaded.


Example 1

To display the KEYB help message, type:

A:\>KEYB 

Example 2

To load the default keyboard map file (STDUS.KEY), type:

A:\>KEYB /D 

Keyboard Map Loader Version 1.00
(C) Copyright 1985, 1986 by Digital Equipment Corporation


The default keyboard map "STDUS.KEY" has been successfully loaded

A:\>

Example 3

To load the French multinational keyboard map file (MCSFR.KEY):

1. Ensure that the text font file and the keyboard map file match by using the FONT command to load MCS.FNT.
2. Type:

A:\>KEYB MCSFR 

Keyboard Map Loader Version 1.00
(C) Copyright 1985, 1986 by Digital Equipment Corporation

MCSFR.KEY

Has been successfully loaded

A:\>



LABEL

Purpose

To create, change, or delete a diskette or hard disk volume label, use the LABEL command. The LABEL command is an external command.

Format

LABEL [drv:][name]

Where:

drv: Is the drive where you want to create, change, or delete a label. If you do not specify a drive, the LABEL command uses the default drive.

name Is the new volume name (11 characters or less).

Comments

You cannot use wildcards or tabs in labels.

NOTE

You cannot use the LABEL command with remote network resources.

Example 1

To name the volume on drive A MEMOS, type:

```
C:\>LABEL A:MEMOS 
```

```
C:\>
```

Example 2

To enter a new label on drive A, type:

```
C:\>LABEL A: 
```

```
Volume in drive A has no label
```

```
Volume label (11 character, ENTER for none)?_
```

```
Delete current volume label (Y/N)?_
```

```
C:\>
```




LCOUNTRY

Purpose

To install country-specific information into memory, use the LCOUNTRY command. The LCOUNTRY command is an external command.

Format

LCOUNTRY [filename[.ext]] [ddd]

Where:

filename.ext Is the drive, path, file name and file extension of the table of country-specific information applicable to the current font file. If you do not specify a drive, the LCOUNTRY command uses the default drive. If you do not specify the path, the LCOUNTRY command searches the current directory, any appended directories, the root directory, or the current search path. If you do not specify a file extension, .COU is used.

ddd Is a three-digit country code. If you specify a file name and a three-digit country code, the country-specific information for that character set is selected. However, if you specify only a three-digit country code, the current country information changes to the country just specified.

If you have no COUNTRY command in your CONFIG.SYS file, the default country is the United States.

Comments

The LCOUNTRY command installs the following country-specific information into memory:

- Date format
- Time format
- Currency symbols
- Decimal separators
- Case conversion information



The LCOUNTRY command does not check that the font, keyboard, and country-specific information match. If they do not match, the results are unpredictable.

If the .COU file does not exist or is not in the proper format, a message is displayed.

Example 1

To load the default country-specific information (STD.COU), type:

```
A:\>LCOUNTRY 
```

```
Load Country Dependent Information Utility Version 1.0  
(C) 1985 by Digital Equipment Corporation
```

```
LCOUNTRY loaded STD.COU  
Country Code = 001
```

```
A:\>
```

Example 2

To load the French country-specific information, type:

```
A:\>LCOUNTRY FR7.COU 
```

```
Load Country Dependent Information Utility Version 1.0  
(C) 1985 by Digital Equipment Corporation
```

```
LCOUNTRY loaded FR7.COU  
Country Code = 033
```

```
A:\>
```

This page intentionally left blank.

Example 3

To change the country information to US (using the same character set), type:

A:\>LCOUNTRY 001

Example 4

To load the ISO Latin-1 character set country data and specify the country as France, type:

A:\>LCOUNTRY ISO 033



MDRIVE

Purpose

To reserve a portion of RAM to function as a memory drive, use the MDRIVE command. MDRIVE is a device driver.

Format

The following command line must be included in your CONFIG.SYS file to install a memory drive:

```
DEVICE=[drv:][\path\]MDRIVE.SYS [n] or [[n][/E]] or [/E*]
```

Where:

- drv:** Is the drive containing the MDRIVE.SYS file. If you do not specify a drive, the DEVICE command uses the drive from which the MS-DOS operating system is started.
- path** Is the path to the directory containing the MDRIVE.SYS file. If you do not specify a path, the DEVICE command uses the directory from which the MS-DOS operating system is started.
- n** Is the memory drive disk size in 64K byte pages. The default value is 64K bytes. The range is 1 (64K bytes) to the amount of available memory on your workstation minus 128K bytes of non-extended memory.
- /E** Use extended memory. The memory drive buffer is in extended memory and the device driver is in lower memory.
- /E*** Use all available extended memory as one memory drive.

CAUTION

We recommend you do not change your CONFIG.SYS file if you are using your workstation in a network environment.

Comments

A memory drive works like a disk drive, but is much faster.

To save data stored on a memory drive, use the BACKUP command.

Before you turn off the power or restart the MS-DOS operating system, copy all data that is currently on a memory drive to a non-memory drive. Otherwise, the data is lost.

The name of the memory drive depends on the number of drives you already have. For example, if you have one diskette drive (A:) and no hard disk, the first memory drive is C, the second is D, and so on.

Each memory drive increases the resident size of the MS-DOS operating system. The resident size is increased by about 1K bytes plus the size of the memory drive buffer you specify (if the drive is installed in low memory).

Example 1

To install one 64K byte memory drive, add this line to your CONFIG.SYS file:

```
DEVICE=MDRIVE.SYS
```

Example 2

To install one 256K byte memory drive in extended memory, add this line to your CONFIG.SYS file:

```
DEVICE=MDRIVE.SYS 4 /E
```

Example 3

To install one memory drive using all your extended memory, add this line to your CONFIG.SYS file:

```
DEVICE=MDRIVE.SYS /E*
```



MKDIR

Purpose

To create a subdirectory in the MS-DOS operating system directory structure, use the MKDIR command. The MKDIR command is an internal command.

Format

MKDIR | MD [drv:\]path

Where:

drv: Is the drive on which you want to make a subdirectory. If you do not specify a drive, the MKDIR command uses the current drive.

path Is the path you want to make to the new subdirectory. If you do not specify a path, the MKDIR command uses the current directory.

Example 1

To create the subdirectory USER in your root directory, type:

```
A:\>MKDIR \USER 
```

```
A:\>
```

Example 2

To create the subdirectory JOE under the subdirectory USER, type:

```
A:\>MKDIR \USER\JOE 
```

```
A:\>
```

MODE

Purpose

To set printer, video mode, communications, printer redirection, and keyboard mode, use the MODE command. The MODE command is an external command.

Printer Setup

Printer setup lets you configure any of the supported printers:

- IBM Pro Printer (STD)
- DEC LA50
- DEC LA75 Companion
- DEC LN03 Plus
- DEC LN03 Plus with the ISO/PC cartridge

Format

MODE [LPT#[:]] [type,width,lpi,retry,qual,bold]

Where:

Is a parallel port number (1, 2, or 3).

type Is a printer type (STD, LA50, LA75DEC, LA75STD, LN03, LN03DEC, or LN03STD).

If you use this parameter, the MODE command sets the printer type for the specified port. If this parameter is not used, the MODE command determines the printer type from the current setting.

If the type is not set but needed, the MODE command prompts you for the printer type.

If you specify a printer type, the MODE command sends the appropriate escape sequence to the printer. The LA75DEC, LN03DEC, and LN03 printers are treated as LA50-type printers. The LA75STD and LN03STD are treated as STD-type printers.



width Is the number of characters on each line (80, 96, or 132).

If the printer type is an STD, LA75, LA75STD, or LN03STD, only 80 or 132 characters on each line are valid.

lpi Is the number of lines in an inch (6 or 8).

retry Is a parameter to enable or disable continuous retries.

p enables continuous retry on timeouts.

- disables continuous retry on timeouts.

If you do not use this parameter, the current setting remains unchanged. If the printer has been redirected to a communications port, retry is enabled on the communications port to which it was redirected.

qual Is the print quality available.

d = draft

e = enhanced

h = high

bold Is the number of passes for each printed line.

b = bold

n = normal

Comments

You can use PRN instead of LPT1 and LA75 instead of LA75STD. You can enter parameters, separated by commas, in any order. You cannot use LN03 instead of LN03STD.

Example 1

To display the MODE help message, type:

A: \>MODE

Example 2

To set up the LA75 printer for use, type:

```
A:\>MODE LPT1:LA75 
```

```
Mode Setup Utility Version 1.00  
(C) Copyright 1985, 1986 by Digital Equipment Corporation  
Printer type set successfully.  
Printer programmed successfully.
```

```
A:\>
```

Example 3

To set up the LN03 Plus printer for use, type:

```
A:\>MODE LPT1:LN03 
```

```
Mode Setup Utility Version 1.00  
(C) Copyright 1985, 1986 by Digital Equipment Corporation  
Printer type set successfully.  
Printer programmed successfully.
```

```
A:\>
```

Example 4

To set up the LA75 printer for 80 columns, 8 lines per inch, continuous retry, draft quality, and normal, type:

```
A:\>MODE LPT1:LA75,80,8,p,d,n 
```

```
Mode Setup Utility Version 1.00  
(C) Copyright 1985, 1986 by Digital Equipment Corporation  
Printer type set successfully.  
Line width set to 80 columns.  
Vertical spacing set to 8 lines per inch.  
Print quality set to DRAFT.  
Bold print set off.  
"Retry forever" set on.  
Printer programmed successfully.
```

```
A:\>
```



Video Mode

Video mode enables you to select the video mode.

Format

MODE [vidmode]

MODE [[vidmode],shift,[t]]

Where:

vidmode Is one of the following:

40 Set to 40 columns, shades of gray unchanged.

80 Set to 80 columns, shades of gray unchanged.

Selecting 40 or 80 affects characters per line. These selections are valid only in text modes. There is no effect with the monochrome adapter except to clear the screen.

BW40 Set to text mode, 40 columns, 2 shades of gray.

CO40 Set to text mode, 40 columns, 4 shades of gray.

BW80 Set to text mode, 80 columns, 2 shades of gray.

CO80 Set to text mode, 80 columns, 4 shades of gray.

BW320 Set to 320 × 200 pixels, 2 shades of gray.

CO320 Set to 320 × 200 pixels, 4 shades of gray.

BW640 Set to 640 × 200 pixels, 2 shades of gray.

DEC2 Set to 640 × 400 pixels, 2 shades of gray.

DEC4 Set to 640 × 400 pixels, 4 shades of gray.

DEC2 and DEC4 are valid only on the workstation hardware.

MONO Setup for monochrome screen.

shift Is the direction you want to shift the video (l or r).

l = left.

r = right.

t Specifies that you want to test the video. The t parameter is valid only if you have a video card in the expansion box.

Comments

You can use the second format to:

- Shift and align the display
- Test the video (if you have a video card in the expansion box)

NOTE

Shifting and aligning are not needed on the built-in workstation video.

Example 1

To display the MODE help message, type:

A:\> MODE

Example 2

To set the video to 640 × 200 pixels with two shades of gray, type:

A:\> MODE BW640

Video mode set successfully.

A:\>



Communications Setup

Communications setup enables you to set the parameters for the serial ports and communications ports, including the DEC only serial printer port, SPP.

Format

MODE [COMn[:][[baud,parity,databits,stopbits,]retry,bypass]]

MODE [SPP[:][[baud,parity,databits,stopbits,]retry,bypass]]

Where:

- n** Is a serial port number (1 or 2).
- baud** Is the baud rate.
50, 75, 110, 134.5, 150, 300, 600, 1200 (default), 1800, 2000, 2400, 3600, 4800, 7200, 9600, 19200.
- parity** Is the parity (e, o, or n).
e = even (default).
o = odd.
n = none.
- databits** Is the number of databits (5, 6, 7 (default), or 8).
- stopbits** Is the number of stopbits (1 or 2).
The default is 2 for 110 baud, and 1 for all others.
- retry** Enables or disables continuous retry on timeouts (p or -).
p enables continuous retry on a timeout.
- disables continuous retry on a timeout.
The retry field is used if the port is being used for a serial printer. If you leave this field blank, retries are disabled.

bypass Is used to enable or disable modem control signals (b or m).

b bypasses modem control signals.

m uses modem control signals..

The bypass field is used to bypass the modem control signals coming into a port. It is usually used when a serial port is used for a printer. If the printer uses XON/XOFF instead of modem control, set bypass = b. Normally, modem control signals are used, bypass = m.

Comments

You can specify the following parameters in any order. They must be separated by one or more commas. Extra commas can precede or follow any parameter.

Example 1

To display the MODE help message, type:

```
A:\>MODE 
```

Example 2

To set up communications port 1 for 1200 baud, even parity, 7 databits, 1 stopbit, continuous retry, and bypass modem control, type:

```
A:\>MODE COM1:1200,E,7,1,P,B 
```

```
Mode Setup Utility Version 1.0  
(C) 1985 by Digital Equipment Corporation  
Serial port programmed successfully.
```

```
A:\>
```



Printer Redirection

Printer redirection enables you to redirect any of the three parallel ports (LPT1:, LPT2:, or LPT3:) to either of the communication ports (COM1: or COM2:) or to the serial printer port (SPP:). LPT1: is the default printer port. Because the workstation does not have a built in parallel port, LPT1: is redirected to SPP: when you turn on or restart the workstation.

Format

MODE [LPT#[:]=COMn[:]]

MODE [LPT#[:]=SPP[:]]

MODE [LPT#[:]=LPT[:]]

Where:

* Is a parallel port number (1, 2, or 3).

n Is a serial port number (1 or 2).

Comments

PRN is equivalent to LPT1.

The first two formats redirect the specified output to the specified serial port. If you do not specify the control parameter, it remains unchanged from its current setting.

The default setting when you start your workstation is modem control for the communication ports and XON/XOFF for the serial port.

The third format disables redirection. Modem control remains unchanged in case other printers are also redirected to the port.

After exiting from the MODE program, a message is displayed indicating whether the port is redirected.

Example 1

To display the MODE help message, type:

A:\> MODE

Example 2

To redirect LPT1: to COM1:, type:

A:\> MODE LPT1:=COM1:

Mode Setup Utility Version 1.00
(C) Copyright 1985, 1986 by Digital Equipment Corporation
Parallel port redirected successfully.

A:\>

Example 3

To disable printer redirection, type:

A:\> MODE LPT1:=LPT

Mode Setup Utility Version 1.00
(C) Copyright 1985, 1986 by Digital Equipment Corporation
Parallel port redirection canceled successfully.

A:\>



Keyboard Mode

Keyboard mode enables you to change keyboard mode and alternate keyboard buffer size. Initially the default settings are modified mode and 16 bytes for the buffer.

MODE [keymode[,bufsize]]

Where:

keymode Enables or disables DIGITAL extended keys (m or u). Digital extended keys are F11 through F20 and the special editing keypad.

m disables DIGITAL extended keys.

u enables DIGITAL extended keys.

If keymode is omitted, it remains unchanged.

bufsize Is the size of the new keyboard buffer (1 to 80 characters).

If bufsize is omitted, it remains unchanged. If bufsize is 16, the default buffer is selected.

Example 1

To display the MODE help message, type:

```
A:\>MODE 
```

Example 2

To set the keyboard to use DIGITAL extended keys, type:

```
A:\>MODE U 
```

```
Mode Setup Program Version 1.0  
(C) 1985 by Digital Equipment Corporation  
Keyboard mode set successfully.
```

```
A:\>
```

Example 3

To set the keyboard to use DIGITAL extended keys and specify a buffer of 80 characters, type:

A:\>MODE U,80

Mode Setup Program Version 1.0
(C) 1985 by Digital Equipment Corporation
Keyboard mode set successfully.
Keyboard buffer installed successfully.

A:\>



MORE

Purpose

To view a file one screen at a time, use the MORE command. The MORE command is an external command.

Format

command [filename.ext] | MORE

Where:

- command Is an MS-DOS operating system command.
- filename.ext Is the drive, path, file name and file extension of the file you want to display.
- | Is the pipe separator.
- MORE Is the MORE filter.

Comments

After displaying one screen of information, the MORE command pauses and displays the message:

--MORE--

To proceed, press the Return key. Continue pressing the Return key until all the information has been displayed.

Example 1

To display MYFILES.TXT one screen at a time, type:

A:\>TYPE MYFILES.TXT | MORE

Example 2

To stop the display in the middle of a file, press:

Example 3

To display a directory listing of drive A, type:

A:\>DIR | MORE

MOUSE

Purpose

To make the DIGITAL mouse emulate the Microsoft mouse while using your workstation, use the MOUSE command. The MOUSE command, an external command, allows many applications that assume a Microsoft mouse is present to run with a DIGITAL mouse.

Format

MOUSE

Comments

There are two drivers supplied with the MOUSE command:

- MOUSE.COM, which is run before you run an application outside of MS-Windows
- MOUSE.SYS, which should be placed in your CONFIG.SYS file if you frequently use a mouse outside of MS-Windows

If you unplug your mouse after running the MOUSE command, and then plug the mouse back in, it will not work. To activate the mouse again, you must restart the workstation by pressing the Ctrl/Alt/Del keys.

Example 1

To load MOUSE.COM as you need it, type:

```
A \>MOUSE 
```

Example 2

To place MOUSE.SYS in your CONFIG.SYS file, type:

```
DEVICE=MOUSE.SYS
```



NET

Purpose

To connect to the network and its resources, use the NET command.

Format

NET option

Table 32-7 lists the NET command options.

Table 32-7 NET Command Options

Command	Function
NET CLEAR	Removes DECnet node names.
NET CONTINUE	Continues your network connection.
NET DEFINE	Assigns a DECnet node name.
NET HELP	Gets help.
NET LIST	Displays a list of remote nodes.
NET PAUSE	Temporarily stops your network connection.
NET PRINT	Prints a file on a remote printer.
NET START LAT	Starts network communications services.
NET START RDR	Connects to a network.
NET TEST	Tests the remote node.
NET TIME	Gets the date and time.
NET USE	Connects to a resource.

For more information about network commands, see Chapter 33.

PATH

Purpose

To tell the MS-DOS operating system which directories to search for external command, use the PATH command. The PATH command is an internal command.

Format

PATH [drv:\path][;drv:\path][;...][;]

Where:

drv: Is the drive containing the directory you want searched.

path Is the path to the directory you want searched.

Comments

The MS-DOS operating system always searches your current directory first.

You must specify the complete path to each directory you want the MS-DOS operating system to search. Otherwise, the MS-DOS operating system does a relative search and may or may not search the desired directory.

The MS-DOS operating system searches the path names in the order specified in the PATH command.

The default value is no path. The MS-DOS operating system searches only the current directory.

If you define a new path, it overwrites the old path.

||||| *PATH*

Example 1

To set the path to search the directory JOE for external commands, type:

A:\> PATH \USER\JOE

A:\>

Example 2

To set the path to search your current directory and the directories JOE, SUE, and DEV on drive A, type:

A:\> PATH \USER\JOE;\USER\SUE;\BIN\DEV

A:\>

Example 3

To display the current path, type:

A:\> PATH
PATH=\USER\JOE;\USER\SUE;\BIN\DEV

A:\>

Example 4

To set the NUL path, type:

A:\> PATH ;

A:\>

PAUSE

Purpose

To suspend program execution in a batch file, use the PAUSE command. The PAUSE command is an internal command.

Format

PAUSE [comment]

Where:

comment Is a message displayed by the PAUSE command.

Comments

The PAUSE command cannot be used at the MS-DOS operating system prompt.

When you execute a batch file, you can change disks or perform some other action. The PAUSE command suspends execution until you press any key, except **Ctrl/C**.

If you press **Ctrl/C** while executing a batch file, the MS-DOS operating system stops execution and displays the following message:

```
Terminate batch job (Y/N)?
```

If you press the Y key, the MS-DOS operating system exits from the batch job and displays its prompt. If you press the N key, the MS-DOS operating system displays its prompt, followed by the next command in the batch file.

Use the PAUSE command to break a batch file into pieces, enabling you to end the batch command file at any intermediate point.

||||| PAUSE

Example

To run the CHKDSK command and display the files on drive C, create a batch file that looks like this:

```
ECHO OFF
REM This file runs the CHKDSK command on drive C.
REM It also runs the DIR command on drive C.
REM It is named CHECK.BAT.
PAUSE
CHKDSK C:
DIR C:
```

When the command processor encounters the PAUSE command, it displays:

Strike a key when ready . . .

Press a key to continue executing the commands in the batch file.

PERMIT

Purpose

To offer a single session, single connection file server, use the PERMIT command. The PERMIT command is an external command.

For more information about the PERMIT command, see Chapter 33.



PRINT

Purpose

To print a text file, use the PRINT command. The PRINT command is an external command.

Format

PRINT [/D:][/B:][/U:][/M:][/S:][/Q:] [filename.ext] [/T][/C][/P]

Where:

/D: Specifies the print device. If not specified, the default device is PRN. You can only specify this qualifier the first time you use the PRINT command after starting the MS-DOS operating system.

/B: Sets the size in bytes of the internal buffer. Increasing the value of /B speeds up the PRINT command. The range for /B is 512 to 16384 bytes. You can only specify this qualifier the first time you use the PRINT command after starting the MS-DOS operating system.

/U: Specifies the number of computer clock ticks that the PRINT command waits for the printer to be available. If the PRINT command waits longer than this value, it gives up its timeslice (see /S qualifier). The range for /U is 1 to 255 clock ticks. If you set this value equal to or greater than /M, /U is ignored. You can only specify this qualifier the first time you use the PRINT command after starting the MS-DOS operating system.

/U:10 specifies that if the printer is not available in 10 clock ticks since the CPU gave print control, then return control to the CPU on the 11th clock tick without printing.

/M: Specifies the number of computer clock ticks available to print a file. The default value is 2 clock ticks. The range for /M is from 1 to 255 clock ticks. You can only specify this qualifier the first time you use the PRINT command after starting the MS-DOS operating system.

/M:8 specifies that if you are printing, use 8 consecutive clock ticks to print before returning control to the CPU.

- /S:** Specifies the time slice value. The default is 8. The range for /S is 1 to 255. If you set /S to 1, you get the attention of the CPU 1/2 the time. You can only specify this qualifier the first time you use the PRINT command after starting the MS-DOS operating system.
- /S:7 specifies to skip 7 clock ticks and give control to print on the 8th clock tick. Therefore, the printer has 1/8 of the CPU's processing time, assuming that /M is set to 1. If /S is set to 1, the PRINT command gets 1/2 the CPU's processing time.*
- /Q:** Specifies the number of files allowed in the print queue if you want more than 10. The range for /Q is 4 to 32. You can only specify this qualifier the first time you use the PRINT command after starting the MS-DOS operating system.
- filename.ext** Is the drive, path file name and file extension of the file you want to print. If you do not specify a drive, the PRINT command uses the default drive. If you do not specify a path, the PRINT command uses the current directory.
- /T** Deletes all files in the print queue (waiting to be printed). A message to this effect is displayed.
- /C** Turns on cancel mode. The file preceding /C and all files following it are removed from the print queue.
- /P** Turns on print mode. The file preceding /P and all files following it are added to the print queue.

Comments

The computer clock is like a regular clock. A computer clock ticks n times in one second. When you set the preceding qualifiers, you specify computer clock ticks.

Use the following formula to determine the amount of time the PRINT command gets from the CPU:

$$\text{Time} = \text{Maxticks} / (1 + \text{Timeslice}) * 100$$

||||| *PRINT*

Example 1

To display the contents of the print queue without affecting the queue, type:

A:\> PRINT

A:\>

Example 2

To empty the print queue, type:

A:\> PRINT /T

A:\>

Example 3

To remove TEMP1.TST, TEMP2.TST, and TEMP3.TST from the print queue, type:

A:\> PRINT TEMP1.TST /C TEMP2.TST TEMP3.TST

A:\>

Example 4

To remove TEMP1.TST from the print queue and add TEMP2.TST and TEMP3.TST to the print queue, type:

A:\> PRINT TEMP1.TST /C TEMP2.TST /P TEMP3.TST

A:\>

Example 5

To specify (after starting the MS-DOS operating system) a 512-byte buffer, maxticks = 100, and timeslice = 1, type:

```
A:\>PRINT /B:512 /M:100 /S:1 
```

```
A:\>
```

Example 6

To specify the print device (the first time you use the PRINT command after starting the MS-DOS operating system) as LPT1: and to print the file MEMO.TXT, type:

```
A:\>PRINT /D:LPT1 MEMO.TXT   
Resident part of PRINT installed
```

```
    A:\MEMO.TXT is currently being printed
```

```
A:\>
```



PROMPT

Purpose

To change the MS-DOS operating system command prompt, use the PROMPT command. The PROMPT command is an internal command.

Format

PROMPT text

Where:

text Is the prompt character string that specifies what you want displayed as the prompt.

Comments

If you type no text, the prompt is the default prompt, which is the default drive designation followed by the ">" character (for example, A>).

Table 32-8 lists the characters you must specify to get a specific prompt.

Table 32-8 Prompt Characters

Type	For the prompt
\$\$	The '\$' character
\$t	The current time
\$d	The current date
\$p	The current directory of the default drive
\$v	The version number
\$n	The default drive
\$g	The '>' character
\$l	The '<' character
\$b	The '␣' character
\$_	A carriage return-line feed sequence
\$s	A space (leading only)
\$e	ASCII code X'1B' (escape)

Examples

Table 32-9 contains examples you can enter into your AUTOEXEC.BAT file to display a specific prompt.

Table 32-9 System Prompt Examples

Type	To get
PROMPT \$p	A:\
PROMPT \$p\$g	A:\> (Recommended)
PROMPT \$\$	\$
PROMPT \$n	A
PROMPT \$g	>
PROMPT \$l	<

To set the prompt to display the default drive letter, the current directory and the >, type:

A> PROMPT \$P\$G

A:\>



RECOVER

Purpose

To recover a file or disk containing bad sectors, use the RECOVER command. The RECOVER command is an external command.

Format

RECOVER drv:[\path\[filename.ext]

Where:

- drv: Is the drive you want recovered.
- path Is the path to the directory containing the file you want recovered. If you do not specify a path, the RECOVER command uses the current directory.
- filename.ext Is the file name and file extension of the file you want recovered.

Comments

If a sector on a disk is bad, you can recover either the file containing that sector (without the bad sector) or the entire disk (if the bad sector was in a directory).

The MS-DOS operating system reads the file or disk sector by sector and skips the bad sectors. When it finds bad sectors, it marks them and no longer allocates them to store your data.

NOTE

You cannot use the RECOVER command with a remote network resource as the target.

Example 1

To recover all of the MEMO.TXT file (except the bad sectors), type:

A:\> RECOVER MEMO.TXT

A:\>

Example 2

To recover all of drive C (except the bad sectors), type:

A:\> RECOVER C:

A:\>

||||| *REM*

REM

Purpose

To display remarks from a batch file, use the REM command. The REM command is an internal command.

Format

REM comment

Where:

comment Is the text following the REM command.

Comments

The REM command cannot be used at the MS-DOS operating system prompt.

ECHO must be on to display remarks.

You can use the REM command without a comment in your file to add blank lines for readability.

Example

To display comments using the REM command, use the following batch file as an example:

```
REM This file runs the CHKDSK command on drive C
REM It also runs the DIR command on drive C
REM It is named CHECK.BAT
PAUSE
CHKDSK C:
DIR C:
```

REN

Purpose

To rename a file, use the REN command. The REN command is an internal command.

Format

REN filename1.ext filename2.ext

Where:

filename1.ext Is the drive, path, file name and file extension of the current file. If you do not specify a drive, the REN command uses the default drive. If you do not specify a path, the REN command uses the current directory.

filename2.ext Is the new file name and file extension.

Comments

You must supply a drive name if the file is not on the default drive.

You cannot rename files across drives.

Wildcards can be used in both file names and file extensions.

Example 1

To change all .LST files to .PRN files, type:

```
A:\>REN *.LST *.PRN 
```

```
A:\>
```

Example 2

To rename CHAP10 on drive C to PART10, type:

```
A:\>REN C:CHAP10 PART10 
```

```
A:\>
```

The file remains on drive C.



RESTORE

Purpose

To restore and make usable back-up files from a back-up disk created using the BACKUP command, use the RESTORE command.

In addition to restoring files to local drives, the RESTORE command allows you to restore files to a network drive.

Format

RESTORE [drv1: drv2:[\path\[filename.ext] [/S[/P]]

Where:

- drv1: Is the drive containing the BACKUP source files.
- drv2: Is the destination drive.
- path Is the path to the directory where the back-up files must be restored. It must exist, unless you use the /S qualifier. If you use the /S qualifier, a subdirectory will be created if it does not exist.
- filename.ext Is the file name and file extension of the restored file.
- /S Restores subdirectories. If the destination disk does not contain the subdirectories from which the files were backed up, they are created, and the files are restored.
- The /S qualifier can be used without specifying a path if the target directory is below the current directory.
- /P Prompts you for permission to restore read-only files.

Comments

The RESTORE command only restores files to the directory area where the files originated. For example, if you backed up files to A:\TEST from C:\TEST, you can only restore the files from A:\TEST to C:\TEST.



DIGITAL stores back-up files on a hard disk in a subdirectory called \BKSUBDIR (if you back up files to a hard disk or a network drive). The industry-standard BACKUP command stores back-up files on a subdirectory called \BACKUP. When using the RESTORE command with industry-standard files, you must explicitly specify \BACKUP as the source of the restore. If you do not, the defaults used by the RESTORE command will not find the files.

Example 1

To display the RESTORE help message, type:

```
A:\>RESTORE<Return>
```

Example 2

To determine the original directory needed to restore the file TEST.TXT, type:

```
C:\>RESTORE A:\TEST.TXT<Return>
File TEST.TXT           Restore Path \TEST\TEST.TXT
C:\>
```

Example 3

To restore all .ASM files from C:\ASMBK to their original directory on drive A, type:

```
A:\>RESTORE C:\ASMBK\*.ASM /S<Return>
```

Example 4

To restore all the files from network drive I to drive C, type:

```
I:\>RESTORE I: C: /S<Return>
```

```
Files were backed up on 12-1-1986
Restoring files from drive I:
```

```
.
.
.
```

```
I:\>
```



RMDIR

Purpose

To remove a subdirectory from the MS-DOS operating system directory structure, use the RMDIR command. The RMDIR command is an internal command.

Format

RMDIR | RD subdirectory

Where:

subdirectory Is the subdirectory you want to remove.

Comments

You must delete all files in a subdirectory before you use the RMDIR command.

Example

To remove JOE from the directory structure, type:

```
A:\>RMDIR \USER\JOE 
```

```
A:\>
```

SELECT

Purpose

To append or create information in the AUTOEXEC.BAT and CONFIG.SYS files, use the SELECT command. The SELECT command is an external command.

Format

SELECT [cc cs kb [drv:]]

Where:

cc Is the country code (three digits).

001	United States	002	Canada
031	Netherlands	032	Belgium
033	France	034	Spain
039	Italy	041	Switzerland
044	United Kingdom	045	Denmark
046	Sweden	047	Norway
049	Germany	061	Australia
358	Finland	972	Israel

cs Is the character set code (three characters).

CA7	Canadian 7-bit NRC	CH7	Swiss 7-bit NRC
DE7	German 7-bit NRC	DK7	Danish 7-bit NRC
ES7	Spanish 7-bit NRC	FI7	Finnish 7-bit NRC
FR7	French 7-bit NRC	ISO	ISO Multinational
IT7	Italian 7-bit NRC	MCS	DIGITAL Multinational
NO7	Norwegian 7-bit NRC	SE7	Swedish 7-bit NRC
ST2	IBM Norway/Denmark Extended	STD	IBM Extended
UK7	United Kingdom 7-bit NRC		

||||| *SELECT*

kb Is the country keyboard abbreviation (two characters).

CA	Canadian	CH	Swiss
DE	German	DK	Danish
ES	Spanish	FI	Finnish
FR	French	IT	Italian
NO	Norwegian	SD	Swiss (German)
SE	Swedish	SF	Swiss (French)
UK	English	US	American English

drv: Is the destination drive. If you do not specify a drive, the SELECT command uses the default drive.

CAUTION

We recommend you do not change your AUTOEXEC.BAT file or your CONFIG.SYS file if you are using your workstation in a network environment.

Comments

The SELECT command appends or creates the following information in the CONFIG.SYS and AUTOEXEC.BAT files:

- Date and time formats
- Character set selection
- Keyboard layout

This information determines the base system configuration when you start the workstation, or when you restart the MS-DOS operating system.

The destination disk must be formatted and you must be able to start the MS-DOS operating system from it.

Table 32-10 shows how the SELECT command affects the CONFIG.SYS file and the AUTOEXEC.BAT file.

Table 32-10 How SELECT Affects CONFIG.SYS and AUTOEXEC.BAT

File	Exists	Status	What Happens
CONFIG.SYS	No		The CONFIG.SYS file is created. It contains the single command line COUNTRY=cc.
CONFIG.SYS	Yes	No line begins with COUNTRY.	The new line is added to beginning of the file.
CONFIG.SYS	Yes	One or more lines begin with COUNTRY.	The first occurrence of the line beginning with COUNTRY is replaced. The remaining lines beginning with COUNTRY are deleted.
AUTOEXEC.BAT	No		The AUTOEXEC.BAT file is created. It contains the lines: FONT cs KEYB cskb LCOUNTRY cs
AUTOEXEC.BAT	Yes	No lines begin with FONT, KEYB, or LCOUNTRY.	The new lines are added at the beginning of the file. These files must be in the root directory.
AUTOEXEC.BAT	Yes	One or more lines begin with FONT, KEYB, or LCOUNTRY.	The first occurrence is replaced with the new line. All remaining occurrences are deleted.

||||| *SELECT*

Example 1

To display the SELECT help message, type:

A:\> SELECT

Example 2

To load the French country-specific information, the multinational character set, and the French keyboard map file, type:

A:\> SELECT 033 MCS FR
Country Configuration Utility Version 1.00
(C) Copyright 1985, 1986 by Digital Equipment Corporation

Adding "COUNTRY=033" to \CONFIG.SYS
Adding "FONT MCS" to \AUTOEXEC.BAT
Adding "KEYB MCSFR" to \AUTOEXEC.BAT
Adding "LCOUNTRY MCS" to \AUTOEXEC.BAT
Configuration successfully completed.

A:\>

SET

Purpose

To set one string value in the environment equal to another string value, use the SET command. The SET command is an internal command.

Format

SET [string1=string2]

Where:

string1 Is the current string.

string2 Is the new string.

Comments

When the MS-DOS operating system sees a SET command, it inserts the entire string into a part of memory reserved for environment strings. If string1 already exists in the environment, it is replaced by string2. If you type the SET command with only string1, the associated string name is removed from the environment.

By examining its environment, an application program can get a listing of all values that have been set. The environment values are passed in the Program Segment Prefix.

If you use the SET command in batch processing, you can define your replaceable parameters with names instead of numbers. If your batch file contains the statement LINK %FILE%, you can set the name that the MS-DOS operating system uses for that variable with the SET command.

CAUTION

We recommend you do not change your AUTOEXEC.BAT file if you are using your workstation in a network environment.

||||| SET

Example 1

To specify that the COMMAND.COM file is located in the subdirectory SYS on drive A, add the following line to your AUTOEXEC.BAT file:

```
SET COMSPEC=A:\SYS\COMMAND.COM
```

This line is needed if the COMMAND.COM file has to be reloaded after you run an application program.

Example 2

To replace the %FILE% parameter with the file name DOMORE in all your batch files, add the following line to your AUTOEXEC.BAT file:

```
SET file=DOMORE
```

Therefore, you do not need to edit each batch file to change the replaceable parameter names.

When you use text (instead of numbers) as replaceable parameters, end the name with a percent sign.

Example 3

To display the current environment settings, type:

```
A:\>SET   
COMSPEC=A:\COMMAND.COM  
PROMPT=$P$G  
PATH=A:\SYS;A:\SYS\DOS;A:\SYS\WIN;A:\SYS\NET
```

```
A:\>
```



SHARE

Purpose

To install file sharing and locking, use the SHARE command. The SHARE command is an external command.

Format

SHARE [/F:space] [/L:locks]

Where:

- /F:space** Allocates file space (in bytes) for the area the MS-DOS operating system uses to record file-sharing information. Each open file needs the length of the full file name plus 11 bytes (the average path name is 20 bytes). The default value for /F is 2048 bytes.
- /L:locks** Sets the number of opened files that are locked. Only one user can open a locked file. The default value for /L is 20 locks.

Comments

Use the SHARE command only when using the network.

You can include the SHARE command in the AUTOEXEC.BAT file to install file sharing.

Once you have run the SHARE command in an MS-DOS operating system session, the MS-DOS operating system checks all read and write requests.

If you want to change the allocated file space or the number of open files that get locked, you must restart the workstation and run the command with the new values.

Example 1

To load file sharing and use the default values for the /F and /L qualifiers, type:

```
A:\>SHARE 
```

This page intentionally left blank.

Example 2

To allocate 4096 bytes of file space for file-sharing information, type:

A:\>SHARE /F:4096

Example 3

To lock 9 opened files, type:

A:\>SHARE /L:9



SHIFT

Purpose

To access more than 10 replaceable parameters in a batch file, use the SHIFT command. The SHIFT command is an internal command.

Format

SHIFT

Comments

The SHIFT command cannot be used at the MS-DOS operating system prompt.

Usually, command files are limited to handling 10 parameters (%0 through %9). To access more than 10 parameters, use the SHIFT command to change the command line parameters.

There is no backward shift. Once the SHIFT command is executed, the 0 parameter (%0) that existed before the shift cannot be recovered.

The first parameter (%0) before any shifts is the name of the batch file.

Example

Assume that the file TEST.BAT contains the following command lines:

```
SHIFT
TYPE %0
TYPE %1
SHIFT
TYPE %0
```

Assume, also, that the parameters are:

```
%0 = TEST
%1 = FILE1.TXT
%2 = FILE2.TXT
```

To shift the parameters one position, type:

```
A:\>TEST FILE1.TXT FILE2.TXT 
```

The new parameters are:

```
%0 = FILE1.TXT
%1 = FILE2.TXT
%2 =
```

The first TYPE %0 command displays the contents of FILE1.TXT. The TYPE %1 command displays the contents of FILE2.TXT. The SHIFT command shifts each parameter one position. The new parameters are:

```
%0 = FILE2.TXT
%1 =
%2 =
```

The second TYPE %0 command displays the contents of FILE2.TXT again.

If more than 10 are on a command line, those that appear after the 10th (%9) parameter are successively shifted one at a time into %9.



SORT

Purpose

To read, sort, and display standard input, use the SORT command. The SORT command is an external command.

Format

SORT [/R] [/+n]

Where:

/R Reverses the sort order (from Z to A).

/+n Specifies that the SORT command should start with column n (where n is some number). If you do not specify this qualifier, the SORT command begins sorting from column 1.

Comments

The SORT program checks the name of the currently loaded font file and searches for the corresponding .SRT file. This sort file contains the collating sequence for each character in the font character set.

If the .SRT file does not exist or is not in the proper format, a message is displayed.

The SORT program contains the default sort table STD.SRT.

You can use the SORT command to alphabetize a file by columns.

You can also use SORT with redirection for input and output to a file.

Example 1

To read the file UNSORT.TXT, reverse the sort, and write the output to SORT.TXT, type:

```
A:\>SORT /R < UNSORT.TXT > SORT.TXT 
```

```
A:\>
```

Example 2

To sort the file UNSORT.TXT when the ISO.FNT file is loaded, type:

```
A:\>SORT < UNSORT.TXT 
```

The SORT command then uses the ISO.SRT file to do the sorting.

Example 3

To sort the directory listing by file type (the file type starts in column 10) and send the output to the screen, type:

```
A:\>DIR ! SORT /+10 
```

```

MORE      COM      282    2-10-86   11:13a
ASSIGN    COM      1509   2-10-86   10:21a
APPEND    COM      1724   5-05-85   12:02a

```

```

.
.
.

```

```

ANSI      SYS      1903   2-06-86   3:25p
MDRIVE    SYS      2996   2-06-86   2:00p

```

```
Directory of A:\
```

```
A:\>
```

||||| SORT

Example 4

To sort the directory listing by file size (the file size starts in column 14) and send the output to the screen, type:

A:\>DIR | SORT /+14

```
00351C41          0    3-01-86   11:51a
00351E0F          0    3-01-86   11:51a
CONFIG   SYS       72    1-11-86    1:21p
AUTOEXEC BAT     211    1-11-86    2:43p
SORT     EXE     2144    2-06-86    2:58p
COMMAND  CDM    23450   12-06-85    2:56p
```

```
Directory of A:\
        6 File(s)  1148416 bytes free
Volume in drive A is NONAME
```

A:\>

Example 5

To sort the directory listing by file size and send it to the screen, one screen at a time, type:

A:\>DIR | SORT /+14 | MORE

SUBST

Purpose

To substitute a logical drive letter for a valid path name, use the SUBST command. The external SUBST command deletes a logical drive or creates a logical drive by associating a path name with a drive letter.

Format

SUBST [drv1: drv2:\path2]

SUBST drv1: /D

Where:

drv1: Is the logical drive for the substituted path name. This drive cannot be ASSIGned or in use when you execute the SUBST command.

drv2: Is the drive you want to substitute with a logical drive.

path2 Is the path you want to substitute with a logical drive.

/D Deletes the logical drive for the path name.

Comments

When the MS-DOS operating system sees a drive that was created with the SUBST command, it replaces the reference with the substituted path name.

NOTE

You cannot use the SUBST command with any network, ASSIGned, or JOINed drives.



Example 1

To create a logical drive E for the path name A:\USR\FRED\FORMS, type:

```
A:\>SUBST E: A:\USR\FRED\FORMS 
```

```
A:\>
```

Example 2

To display the files in A:\USR\FRED\FORMS, type:

```
A:\>DIR E: 
```

Example 3

To display the names of the logical drives, type:

```
A:\>SUBST   
E: => A:\USR\FRED\FORMS
```

```
A:\>
```

Example 4

To delete the logical drive E, type:

```
A:\>SUBST E: /D 
```

```
A:\>
```

SYS

Purpose

To copy the system files IO.SYS and MSDOS.SYS from one disk to another, use the SYS command. The SYS command is an external command.

Format

SYS drv:

Where:

drv: Is the drive where you want to transfer the system files.

Comments

The destination disk must be completely blank or already contain the system files IO.SYS and MSDOS.SYS. If IO.SYS and MSDOS.SYS exist on the destination disk, the IO.SYS and MSDOS.SYS you are copying to the destination disk must be the same size, or smaller.

IO.SYS and MSDOS.SYS are both hidden files that are not displayed when you type the DIR command.

Use the COPY command to copy COMMAND.COM.

NOTE

You cannot use the SYS command to copy the MS-DOS operating system to a remote resource. You can use the SYS command to copy the MS-DOS operating system from a remote resource to a local drive.

||||| SYS

Example 1

To copy IO.SYS and MSDOS.SYS from a remote resource to drive A:, first make the remote resource the default drive, and then type:

SYS A:

Example 2

To copy the MS-DOS operating system files to drive C, type:

A:\>SYS C:
System transferred

A:\>

TIME

Purpose

To set and display the time, use the TIME command. The TIME command is an internal command.

Format

TIME [hh][:mm][:ss][.cc]

Where:

- hh Is the hours (00 through 24).
- mm Is the minutes (00 through 59).
- ss Is the seconds (00 through 59).
- cc Is the hundredths of seconds (00 through 99).

Comments

The time format is country-specific. If you enter an invalid time, the MS-DOS operating system displays a message and prompts you to enter the time again.

Example 1

To enter a new time, type:

```
A:\> TIME 
Current time is 1:25:45.00
Enter new time:
```

```
A:\>
```

Press the Return key if you do not want to change the time shown.

Example 2

To set the time to 4:15 PM, type:

```
A:\> TIME 16:15 
```

```
A:\>
```



TYPE

Purpose

To display the contents of an ASCII file, use the TYPE command. The TYPE command is an internal command.

Format

TYPE filename.ext

Where:

filename.ext Is the drive, path, file name and file extension of the file you want to display. If you do not specify a drive, the TYPE command uses the default drive. If you do not specify a path, the TYPE command uses the current directory.

Comments

When you use the TYPE command to display a file with tabs in it, all tabs expand to 8 spaces.

Do not use the TYPE command to display a binary file. A binary file usually has a .BIN or .COM file extension.

Example 1

To display the file MEMO.TXT on the screen, type:

```
A:\> TYPE MEMO.TXT 
```

```
A:\>
```

Example 2

To display the file REPORT.TXT in the subdirectory \USER\SCOTT on the screen, type:

```
A:\>TYPE \USER\SCOTT\REPORT.TXT 
```

```
A:\>
```

Example 3

To display the file REPORT.TXT in the subdirectory \USER\SCOTT on the screen and display -MORE- at the bottom of each screen display, type:

```
A:\>TYPE \USER\SCOTT\REPORT.TXT ; MORE<Return>
```

```
A:\>
```



VER

Purpose

To display the MS-DOS operating system version number, use the VER command. The VER command is an internal command.

Format

VER

Example

To display the MS-DOS operating system version number, type:

```
A:\> VER 
```

```
Digital Equipment Corporation MS-DOS Version 3.10
```

```
A:\>
```

VERIFY

Purpose

To verify that a file is written correctly to a disk, use the VERIFY command. The VERIFY command is an internal command.

Format

VERIFY [ON | OFF]

Comments

VERIFY OFF is the default when you turn on the workstation.

This command has the same purpose as the COPY command with the /V qualifier.

The MS-DOS operating system performs a VERIFY each time you write data to a disk. If the VERIFY command is unable to successfully write your data to disk, a message is displayed.

VERIFY ON remains in effect until you turn it off.

Example 1

To set VERIFY to ON, type:

```
A:\> VERIFY ON 
```

```
A:\>
```

Example 2

To display the current setting of VERIFY, type:

```
A:\> VERIFY 
```

```
VERIFY is on
```

```
A:\>
```



VOL

Purpose

To display the default drive's label, use the VOL command. The VOL command is an internal command.

Format

VOL [drv:]

Where:

drv: Is the drive whose volume label you want to see. If you do not specify a drive, the VOL command displays the volume label of the default drive.

Example

To display the label of the disk in drive C, type:

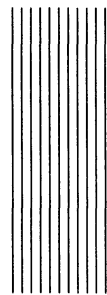
```
A:\> VOL C: 
```

```
Volume in drive C is MSDOSV310
```

```
A:\>
```

Chapter 33

Using the Network With MS-DOS



This chapter discusses:

- Network commands
- What a network is
- What a server is
- How to connect to the network
- How to connect to a resource
- How to use a resource
- How to disconnect from a resource
- How to automatically connect to a resource

Table 33-1 lists the network commands and what they do.

Table 33-1 Network Commands

Command	Function
NET CLEAR	Removes DECnet node names.
NET CONTINUE	Continues your network connection.
NET DEFINE	Assigns a DECnet node name.
NET HELP	Gets help.
NET LIST	Displays a list of remote nodes.
NET PAUSE	Temporarily stops your network connection.
NET PRINT	Prints a file on a remote printer.



Table 33-1 Network Commands (cont.)

Command	Function
NET START LAT	Starts network communications services.
NET START RDR	Connects to a network.
NET TEST	Tests the remote node.
NET TIME	Gets the date and time from a node.
NET USE	Connects to a resource.
PERMIT	Offers a single session, single connection file server.

What Is a Network?

A network is two or more computers connected together to transfer data and share resources, such as directories, files and printers. In a network, each computer runs independently, even though it can communicate with other computers on the network.

A network gives you the communication and space-saving advantages of shared files, and the convenience and economy of a shared printer.

The network lets you and other users access files and printers that belong to other computers. These computers can be in your office, in the next room, or several floors away. Using a network, you can access files and printers on other computers as if they were attached to the computer on your desk. You can also read and edit existing files, or create new ones. And, you can use files on other computers while you are using application programs.



What Is a Server?

A server stores the resources (directories, files, and printers) accessible by workstations (a computer used to access the resources available through the network). It is called a server because it serves the other workstations on the network when they request file and printer services. There can be many servers on one network.

The system administrator determines which resources are shared on the network. When a resource is shared, it is made available to users on the network. The system administrator also sets access restrictions, if any, to these resources.

Each workstation on the network can use the resources that reside on the workstation (locally) or on the server (remotely). If the system administrator offers a remote resource to the network, a workstation can access that resource as if it were local.

You can only use resources on another workstation when it functions as a server.

On the network, you can use most of the MS-DOS operating system commands, and you can run most programs designed to run under the MS-DOS operating system. You cannot use the following MS-DOS operating system commands with remote network resources:

CHKDSK	DISKCOPY
JOIN	LABEL
RECOVER	SUBST
SYS*	

* The SYS command can be used to copy the system files from a remote network resource.



Before Using the Network

Before you can use the network and a resource on the network, you must connect to:

- The network
- A resource

Getting Help

To display a list of the commands for which help is available, type:

```
A:\>NET HELP 
```

To get help on a specific command, type:

```
A:\>NET HELP command 
```

Where:

command Is the command for which you want help.

Connecting to the Network (NET START RDR)

To connect to the network, use the NET START REDIRECTOR (or, NET START RDR) command. The NET START RDR command executes the MSNET.INI file. This file contains network commands and a script to execute each of them. When the network commands in the MSNET.INI file execute successfully, your workstation connects to the network. If the network commands in the MSNET.INI do not execute successfully, a message is displayed indicating that a problem occurred.

To use the NET START RDR command, type:

```
A:\>NET START RDR 
```



If the connection is successful, information similar to the following information is displayed:

```
Network kernel version 1.00
Datalink - Version 1.00
DECnet DNP Version T1.00
DECnet Node Name 'YELLOW' (9.999)
DECnet started
MS-NET/DECnet Session Version 1.00
```

```
DECnet LAT Version 1.00
MS-NET Redirector 1.00
Command completed successfully.
```

The AUTOEXEC.BAT file on your key diskette automatically executes the NET START RDR command. Therefore, when you start the MS-DOS operating system from the key diskette, you also automatically connect to the network.

Specifying Device Names

When you specify a device on the command line, you specify either a physical device or a logical device.

A physical device is a device that exists on your workstation, for example, drive A. If you specify a physical printer, for example PRN:, you are specifying your workstation printer.

A logical device is a device (for example, drive H) that exists on a server. If you specify a logical printer, for example LPT1:, you are specifying a remote printer. You use the logical device as if it existed on your workstation. If you connect to a server using logical devices, you save your physical devices for work with physical disks or printers.

The MS-DOS operating system allows you to have 26 logical devices (A through Z), although the default for the LASTDRIVE command in the CONFIG.SYS file is E. The installation procedure, when creating the CONFIG.SYS file, sets LASTDRIVE equal to M.



Connecting to a Resource (NET USE)

To connect to a resource, use the NET USE command. The first time you use the NET USE command, it establishes a session and a connection. Any further NET USE commands establish connections.

The NET USE command enables you to connect to a directory resource, from which you can access files, or to connect to a printer resource, from which you can print files. After connecting to the network, your requests for remote resources are sent over the network to the designated server.

The NET USE command has the format:

```
[NET] USE device: \\nodename\alias [password | *]
```

Where:

- | | |
|----------|---|
| device: | Is the name of a device you want to assign a directory. Device is a drive letter, such as C or D. |
| nodename | Is the DECnet node name of the server to which you want to connect. |
| alias | Represents the directory you want to access. The alias is assigned by your system administrator. |
| password | Is the password for the node. |
| * | Prompts you for the password. |

For example, to assign the resource specified by the alias ACCOUNTS on the DECnet node DANCER to drive E, type:

```
A:\>NET USE E: \\DANCER\ACCOUNTS 
```

Command completed successfully.

```
A:\>
```

Then, to assign the resource specified by the alias ORDERS on the DECnet node DANCER to drive F, type:

```
A:\>NET USE F: \\DANCER\ORDERS 
```

Command completed successfully.

```
A:\>
```



Connecting to a Directory (NET USE)

To connect to a directory, use the NET USE command. For example, to connect a directory, specified by the alias ACCOUNTS, on the DECnet node ORANGE to drive D of your workstation, type:

```
A:\>NET USE D: \\ORANGE\ACCOUNTS 
```

Command completed successfully.

```
A:\>
```

Use the NET USE command to connect to your personal directory on a server. For example, to connect to the directory GALLAGHER on the DECnet node WISDOM to drive E, type:

```
A:\>NET USE E: \\WISDOM\GALLAGHER 
```

You can connect more than one logical drive to the same directory. For example, to assign ACCOUNTS on DANCER to drive E, type:

```
A:\>NET USE E: \\DANCER\ACCOUNTS 
```

Command completed successfully.

```
A:\>
```

Then, to assign ACCOUNTS on DANCER to drive F, type:

```
A:\>NET USE F: \\DANCER\ACCOUNTS 
```

Command completed successfully.

```
A:\>
```

Connecting to a Remote Printer (NET USE)

To connect to a server's printer, use the NET USE command. You use the same format you use when you connect to a remote directory, except now:

- **Prntername** is the alias of the printer and corresponds to a print service offered by the server
- **device** refers to a printer rather than a drive



When connecting to a remote printer, the NET USE command has the format:

[NET] USE device: \\nodename\printername

Where:

device: Is PRN, LPT1, LPT2, or LPT3. A printer device can be connected to only one printer at a time.

nodename Is the DECnet node name of the server offering the printer.

printername Is the alias of the printer.

For example, to connect the local device LPT1 to the printer specified by the alias PRINTER on the DECnet node DANCER, type:

A:\> NET USE LPT1: \\DANCER\PRINTER

Command completed successfully.

A:\>

Listing Remote Connections (NET USE)

To list remote resources connected to your workstation, use the NET USE command:

A:\> NET USE

A list similar to the following list is displayed:

Status	Local Device	Network Name
D:		\\orange\accounts
E:		\\dancer\accounts
F:		\\dancer\accounts
LPT1:		\\dancer\printer



Using Resources

Now that you are connected successfully to the network and to its resources, you use the resources on a server as if they were on your own workstation.

Changing to Another Drive

You change from one drive to another by typing the letter (followed by a colon) of the drive to which you want to change:

```
A:\>D: 
```

After changing to drive D, you use the files in the directory specified by the alias ACCOUNTS on the DECnet node ORANGE as if they were on a disk in your workstation.

Printing a Remote File (NET PRINT)

To display the server's print queue, display another print queue, or print a file on a remote printer, use the NET PRINT command.

If you are connected to the VAX/VMS Server for MS-DOS and issue the NET PRINT \\nodename command, the server returns information about the generic queue SYS\$PRINT. If the queue is not enabled, see your system administrator.

The NET PRINT command has the format:

```
[NET] PRINT \\nodename
```

```
[NET] PRINT [filename] device
```

Where:

nodename Is the node name of the server to which you are connected.

filename Is the file you want to print.

device Is LPT1, LPT2, or LPT3.



For example, to show the print queue for the server ORANGE, type:

```
A:\>NET PRINT \\ORANGE 
```

To show the print queue for the device LPT1, type:

```
A:\>NET PRINT LPT1 
```

To send the file MEMO.TXT to the remote printer assigned to the device LPT1, type:

```
A:\>NET PRINT MEMO.TXT LPT1: 
```

Temporarily Disconnecting From Network Resources (NET PAUSE)

You can temporarily disconnect from network resources to connect your devices to your own physical disks, directories, or printers.

NOTE

To suspend disk redirection, you must first exit from MS-Windows.

For example, if you connected your device LPT1 to a network printer, you cannot use that device for your own physical printer. To temporarily disconnect from the network, use the NET PAUSE command. The NET PAUSE command has the format:

```
NET PAUSE [disk redirection | print redirection]
```

```
NET PAUSE [drdr | prdr]
```



Where:

drdr Is disk redirection. It temporarily suspends disk redirection, enabling you to use a previously redirected device to access your own disks.

prdr Is print redirection. It temporarily suspends print redirection, enabling you to use a device to access your own printer.

For example, to temporarily suspend print redirection, type:

```
A:\>NET PAUSE PRDR 
```

You can now use any of your local printers.

Restarting After a NET PAUSE Command (NET CONTINUE)

To continue redirection to a network resource, use the NET CONTINUE command.

NOTE

To use the NET CONTINUE command for disk redirection, you must set your current directory to your local (A: or C:) \DECNET directory.

The NET CONTINUE command has the format:

```
NET CONTINUE [drdr | prdr]
```

Where:

drdr Is disk redirection. It enables you to resume your connection to the network resource.

prdr Is print redirection. It enables you to resume your connection to the network printer.

For example, to continue printer redirection, type:

```
A:\>NET CONTINUE prdr 
```

You can now use the network printer as you did before you issued the NET PAUSE command.



Disconnecting From a Resource

You can only connect to one remote resource per device. If you want to connect to another remote resource with a previously connected device, you must first disconnect the device from its current remote resource.

Disconnecting From a Remote Directory

To disconnect from a remote directory, use the NET USE command with the /D qualifier.

NOTE

Make sure you insert a space before the /D parameter.

For example, to disconnect drive D from the network, type:

```
A:\>NET USE D: /D 
```

You can now use drive D for a different directory resource.

Disconnecting From a Remote Printer

To disconnect from a remote printer, use the NET USE command with the /D qualifier.

For example, to disconnect LPT1 from the network, type:

```
A:\>NET USE LPT1 /D 
```

You can now use device LPT1 for a different printer resource.



Other Network Commands

NET CLEAR

The NET CLEAR command removes DECnet node names from the DECNODE.DAT file on the key diskette. These names are used by NCP. The NET CLEAR command removes the specified DECnet node name or all DECnet node names known to the local node.

The NET CLEAR command has the format:

[NET] CLEAR nodename

Where:

nodename Is the DECnet node name you want to remove from the DECNODE.DAT file.

For example, to remove the DECnet node HOBBIT from the DECNODE.DAT file, type:

```
A:\> NET CLEAR HOBBIT 
```

NET DEFINE

The NET DEFINE command assigns a DECnet node name and access control information to a unique DECnet node address. During execution, the NET DEFINE command automatically sets the MS-NET flag. This flag indicates that the specified node is a part of the VAXmate network. To set the LAT flag, use NCP. The LAT flag indicates which nodes are preferred nodes. When LAT is invoked, the LAT service table is created containing the names of no more than 10 preferred nodes. These preferred nodes are used by the terminal emulators. The NET DEFINE command has the format:

[NET] DEFINE name address

Where:

name Specifies the DECnet name to be associated with the node address.

address Specifies the DECnet address of the node being defined.

For example, to assign the DECnet node name MADRID to the DECnet node address 2.65, type:

```
A:\> NET DEFINE MADRID 2.65 
```



NET LIST

The NET LIST command displays a list of remote nodes recognized by your workstation. The NET LIST command has the format:

[NET] LIST

The NET LIST command displays the following information:

- Node address
- Node name
- Number of active logical links
- Node status, which indicates whether it is an MS-NET node or a preferred LAT host
- Access control information, which is output as account information

For example, to display the node address, node name, number of active logical links, and the access control information, type:

A:\> NET LIST

Node Summary as of 1-Jan-1986 10:05:00

Executor node = 9.999 (YELLOW)

State = On

Identification = DECnet-DOS Y1.1

Node Address	Node Name	Active Links	LAT/MS-NET	Account Information
9.901	BLUE	0	M	
9.902	GREEN	1		
9.903	RED	0		
9.999	YELLOW	1	M	

Command completed successfully.

A:\>

Your workstation can only access nodes defined as MS-NET ("M").



All nodes defined with a key disk or the NET DEFINE command are automatically listed as MS-NET ("M").

NET START LAT

The NET START LAT command enables you to use network communications in the terminal emulator. You use this command when you do not want to start the entire network.

The NET START LAT command has the format:

[NET] START LAT

LAT is started when NET START RDR is executed.

NET TEST

The NET TEST command invokes the loop test for the remote node. It verifies that your node can communicate with a specified remote node.

When the test is complete, a success message is displayed. If the test is unsuccessful, an error message is displayed.

The NET TEST command has the format:

[NET] TEST name

Where:

name Is the name of a remote node. A node name is a 1 to 6 character (alphanumeric) string that identifies a specific node. A node address is a numeric character string consisting of an area number and a specific node number. The node address also serves to uniquely identify the node in the network.

For example, to specify the node GRAHAM as the remote node to be used in the remote node test, type:

A:\>NET TEST GRAHAM



NET TIME

The NET TIME command gets the date and time from a node you specify, or from the first available node. Then, the MS-DOS operating system DATE and TIME can be set.

The NET TIME command has the format:

NET TIME [nodename]

NETTIME [nodename]

Where:

nodename Is a DECnet node name.

For example, to get the date and time from the DECnet node named YELLOW, type:

```
A:\>NET TIME YELLOW 
```

```
The current date is 03/02/86  
The current time is 09:21:05.97
```

```
A:\>
```

To get the date and time from any DECnet node, type:

```
A:\>NET TIME   
Time/Date serviced by node YELLOW
```

```
The current date is 03/02/86  
The current time is 09:21:05.97
```

```
A:\>
```



PERMIT

PERMIT is an external command that lets you use your workstation as a single-session, single-connection file server. The PERMIT command waits for the other workstation to create the connection. After the connection is made, no other workstations can connect to the server. The session is terminated when the connected workstation executes a NET USE command with the /D qualifier, or when you press Ctrl/C twice on the server workstation.

You cannot use a password with the alias. You can, however, restrict access to a particular workstation.

The network must be started before you use the PERMIT command.

Both workstation nodes must be defined in each other's network definition file. To add a node, see your system administrator.

The permit command format is:

```
PERMIT alias=drv:path [/permissions] nodename | *
```

Where:

- | | |
|--------------|--|
| alias | Is a name representing the complete path name of the shared directory. |
| drv: | Is the drive for the existing directory offered to the network. |
| path | Is the path name for the existing directory offered to the network. |
| /permissions | Controls the user's ability to modify or create files in the directory.

/R lets the user read and copy files in the directory.

/RW lets the user read, copy, and change (write to) files in the directory.

/RWC lets the user read, copy, change, and create files in the directory. This is the default. |
| nodename | Is the DECnet node name of the workstation on the network with which you exclusively want to share your disk or directory.

Specifies that any single workstation can share your disk or directory. |



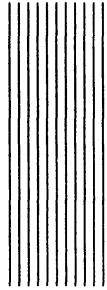
For example, to offer read access in the directory named A:\TOOLS to the DECnet node named BUBBLE, type:

```
A:\>PERMIT TOOL=A:\TOOLS /R BUBBLE 
```

To offer file creation access in the directory named A:\TOOLS to any DECnet node, type:

```
A:\>PERMIT TOOL=A:\TOOLS /C * 
```

Chapter 34 ***Using Network*** ***File Transfer (NFT)***



This chapter describes the Network File Transfer (NFT) utility, a network program that enables you to access local and remote files. After you install the DECnet-VAXmate software, you can use NFT to:

- Append two or more files
- Copy files between the local and remote nodes
- Delete local and remote files
- List files located on a local or remote directory
- Define and display access control information
- Run batch files on remote nodes
- Display the contents of a local or remote file
- Print files on remote printers

This chapter tells you how to:

- Run NFT
- Specify access control information
- Specify remote files
- Identify types of files and systems
- Use NFT commands

NOTE

You have to execute NET START RDR before you can use NFT.



Running NFT

You perform NFT functions by entering:

- A single command
- A batch file that contains NFT commands
- Multiple commands

To enter a single command, type:

```
C:\>NFT command   
C:\>
```

To enter a batch file, type:

```
C:\>NFT file.ext   
C:\>
```

When you run NFT in batch mode, you receive an error-level value of 0 to indicate success and of 1 to indicate failure.

To enter multiple commands, type:

```
C:\>NFT   
NFT>command   
NFT>command   
NFT>EXIT   
C:\>
```

The EXIT command exits you from NFT.



Using Access Control Information

Access control information is security information that enables you to access a specified remote node with the privileges of a specific user.

Format for Access Control Information

Access control information includes:

- Username** A character string, consisting of 1 to 39 alphabetic characters, that identifies the user at the remote node.
- Password** A character string, consisting of 1 to 39 alphabetic characters, that identifies the user's password.
- Account** A character string, consisting of 1 to 39 alphanumeric characters, that identifies the user's account.

The node name or node address (area.number) is followed by the username, password, and account, enclosed in quotation marks ("). The entire string ends with a double colon (::).

For example, to provide the node LONDON with access control information, type:

```
LONDON"SMITH OPEN"::
```

Storing Default Access Control Information

You can store access control information for as many as ten nodes. To store access control information, you specify a remote node with:

- Any NFT command
- The SET command

After you store access control information in an NFT session, you do not need to specify it with the commands that follow for that session. This stored information is the default access control information.

The default access control information is not saved when you exit from NFT. Therefore, you cannot use default access control information specified for a previous NFT session.



NOTE

You can also specify default access control information with NCP (see the *VAXmate System Administrator's Guide*). You can use default access control information stored with NCP for more than one NFT session. To override these defaults, use new access control information for the NFT commands.

When you use only a node name with a command, NFT determines the default access control information by following this procedure:

1. NFT checks if you specified the access control information earlier in the same NFT session.
2. If you did not specify any access control information in the same session, NFT checks if you specified it with NCP.
3. If you did not specify access control information with NCP or the same NFT session, NFT assumes that the remote node does not require the information and attempts the current operation.

Changing Default Access Control Information

You can change the default access control information by using different access control information for the same node name in an NFT operation. NFT replaces the original access control information in its temporary table with the new information.

You can also change the access control information with the SET command. In this case, you can only replace the information in the NFT table by using another SET command.

To display the current access control information, use the SHOW command.



Specifying Remote Files

DECnet-VAXmate can copy files to and from nodes running different operating systems. Table 34-1 lists the file specifications that you can use with different operating systems.

Table 34-1 Operating Systems and File Specifications

Operating System	File Specification
VAX/VMS	dev:[directory]filename.ext;ver
TOPS-20	dev:[directory]filename.ext;ver
TOPS-10	dev:[directory]filename.ext
RSX	dev:[DIRECTORY]filename.ext;ver
P/OS	dev:[DIRECTORY]filename.ext;ver
MS-DOS	dev:dir\dir\...\filename.ext
ULTRIX-32	dir/dir/.../filename.ext
RSTS/E	dev:[DIRECTORY]filename.ext

NOTE

Most systems accept square brackets [] or angle brackets < > to delimit a directory name, and a period (.) or a semicolon (;) to delimit a version. NFT accepts all of these delimiters.

If any field of the file specification is omitted, NFT assumes the default. File specifications of any other format are foreign to NFT.

When you type a foreign file specification, you must enclose it in quotation marks. For example, to copy the RSTS/E file from the remote node BOSTON to the local node, type:

```
NFT> COPY BOSTON: "DK2:[100,100]NAMES.DAT" 
```



Identifying Types of Files and Systems

Files can have different data types that are used in different systems. Accessing a remote file with a specific data type or system can change its data. This section describes the possible data types and systems for a remote file and how this information can change when the file is accessed in NFT.

Files can be one of two data types:

- **Binary**

A binary (image) file contains data that is copied without interpretation or changes to the data. In other words, the file is copied and received as a carbon copy of itself. The most common example of this type of file is an executable file.

- **ASCII**

An ASCII file has records that end with a carriage return and a line feed <CR><LF>.

Systems can be one of two types:

- **Stream**

With a stream system, a file is a series of continuous characters.

Most stream systems, including the MS-DOS operating system, do not support attributes such as fixed or variable length records. If a file with these attributes is copied to the local system, the attributes are lost.

- **Nonstream**

With a nonstream system, the data in a file is in a specific record format. Examples of nonstream systems are fixed length, variable length, and variable with fixed length control (VFC).

Fixed length records have the same size. The size is determined when you create the file, and you cannot change it.

Variable length records can have different lengths, to a maximum size that you specify. The maximum size is determined when you create the file, and you cannot change it.

VFC records include a fixed length control field that precedes the variable length data. This format enables you to add data that labels the contents of the variable length portion of the record.



Table 34-2 describes the changes to the data types and system types when you copy or append a file from a remote node.

Table 34-2 Copying or Appending Files From a Remote Node

Data Type	System Type	Record Attributes	How the Copied File Is Stored
Binary	Not applicable	Ignored	It is stored as it is received from the remote node.
ASCII	Stream	Ignored	It is stored as it is received from the remote node; however, a carriage control is embedded.
ASCII	Nonstream	Other than implied <CR> <LF>, PRN (print file carriage return), or FTN (FORTRAN carriage return)	It is stored as it is received from the remote node.
ASCII	Nonstream	Implied <CR> <LF>	A <CR> <LF> is added to each record.
ASCII	Nonstream	PRN or FTN	Data is converted correctly.

NFT converts embedded carriage control characters by default. To cancel this conversion, specify the /NOCONVERT qualifier.

Although NFT can usually determine whether a file is ASCII, you should use the COPY/IMAGE command to copy a non-ASCII file to a remote node.



Table 34-3 describes the changes that occur when you copy or append a file to a remote node.

Table 34-3 Copying or Appending Files to a Remote Node

Data Type	System Type	Record Attributes	How the File Is Sent
ASCII	Stream	None	The file remains unchanged. Its records are determined by the number of line feeds.
ASCII	Nonstream	Variable, implied <CR> <LF>	The carriage return and line feed are dropped. Its records are determined by the number of line feeds.
Binary	Stream	None	The file remains unchanged.
Binary	Nonstream	Fixed: 128 bytes	The file remains unchanged.

Using NFT Commands

NFT provides commands that enable you to manipulate files located on local and remote nodes. The following sections discuss NFT command conventions, then describe the NFT commands in alphabetical order. Each command description includes the following information:

- Purpose
- Format
- Comments
- Examples



Command Conventions

The following conventions apply to NFT commands:

- A file specification can be local or remote.
- You can abbreviate every command and qualifier as long as it is unique to NFT.
- You can continue a command line on more than one line by pressing the <LF> key.

A space must separate the last word on the first line from the first word on the second line; you can enter the space immediately before or after the <LF> key.

- If you type an incomplete command line, the command prompts you for the needed information.
- If you type a valid qualifier that does not affect certain commands, NFT does not display a message. However, if you type a qualifier that NFT does not accept, NFT displays a message.
- You can use the following wildcards to specify file names: the question mark (?), the percent sign (%), and the asterisk (*).

See the individual **Comments** sections for those commands that do not accept wildcards.



Table of Commands

Table 34-4 lists and briefly describes each NFT command. Use this table as a quick reference once you become familiar with the NFT commands.

Table 34-4 Valid NFT Commands

Command	Function
APPEND	Appends files from the local node to an existing file on the remote node, or copies and appends files from the remote node to an existing file on the local node.
COPY	Copies files from the local node to the remote node or from the remote node to the local node.
DELETE	Deletes a local or remote file.
DIRECTORY	Lists files located in a specified directory.
EXIT	Exits from an NFT operation and returns control to the MS-DOS operating system.
HELP	Displays information about NFT commands and qualifiers on the screen.
PRINT	Queues a file that exists on a remote node to a printer at that node.
SET	Sets defaults for remote file access for the current NFT session.
SHOW	Displays access control information for remote files.
SUBMIT	Submits a batch file to run on a remote node.
TYPE	Displays the contents of a local or remote file on the screen.



APPEND

Purpose

To add the contents of one or more input files to the end of an existing output file, use the APPEND command. You can append either ASCII or binary files to or from remote nodes.

For information on how data is affected when appending a remote file, see Table 34-2 and Table 34-3.

Format

APPEND[/qualifier] infile[,infile][,...] outfile

Where:

/qualifier Is a valid APPEND qualifier. The effect of a qualifier depends upon whether you are copying a file to or from a remote node.

/ASCII

Appends an ASCII file.

When you append a file from a remote node, the file's data is not affected if it is in a stream system. For ASCII files being appended from a nonstream system, the data is handled by the remote file system and by the remote file's record format and record attributes.

When you append a file to a remote node, this indicates that the file has records that end, by default, with a carriage return and a line feed. If the first record does not end with a carriage return and a line feed, NFT makes a binary copy of the file.

By default, the information from the remote node file is not affected.

/DELETE

Used after the /PRINT qualifier, appends a file, prints the file, then deletes the appended file.



APPEND

/IMAGE	<p>Appends a binary (image) file.</p> <p>When you append a file to or from a remote node, the file's data is not affected. For appending a file to a remote node, the default record format is fixed; the default Maximum Record Size (MRS) is 128 bytes.</p> <p>By default, the information from the remote node file is not affected.</p>
/NOCONVERT	<p>When you append a file from a remote node, this disables the expansion of carriage control characters within each logical record when you append a file from a node with an RMS file system, and when the record attributes for the file are either FTN (FORTRAN carriage control) or PRN (print file carriage control).</p>
/NOLOG	<p>Disables printing a notification line when the APPEND command is executed.</p>
/PRINT	<p>Prints a file on the remote node's default printer after the file is appended to a remote node.</p>
/SUBMIT	<p>Submits a batch file to run on the remote node.</p>
infile	<p>Specifies one or more input files to be copied. If you specify multiple input files, you must insert a comma between the file specifications. NFT appends the multiple files to the output file</p>
outfile	<p>Specifies the file to which the input files are appended.</p>



Comments

The local file specification has one of two forms. In its longest form, it consists of the drive name, directory path, file name, and file extension.

In its shortest form, it consists of the file name and file extension. This form assumes that the file is in the current default DECnet-VAXmate directory.

The remote file specification has one of two forms. In its longest form, it consists of a node name and access control information followed by a file specification appropriate to the remote node.

In its shortest form, it consists of a node name followed by a file specification appropriate to the remote node.

You can append one to ten input files to a single output file. The input files must be separated by commas, and the first input file sets default attributes for the following input files.

Example 1

To append the local file FILE1.DAT to the remote file FILE2.DAT;1, located on node ESTHER, then print the resulting output file, type:

```
NFT>APPEND/PRINT FILE1.DAT ESTHER::FILE2.DAT;1 
```

Example 2

To append the remote file FILB.TXT, located on the node LONDON, to the local file FILA.TXT, type:

```
NFT>APPEND LONDON"SMITH OPEN";:WRT:(SMITH)FILB.TXT FILA.TXT 
```

Example 3

To append more than one file to the end of the local file FILA.TXT, type:

```
NFT>APPEND LONDON"SMITH OPEN";:WRT:(SMITH)FILB.TXT;3,FILC.TXT;2<LF>
FILA.TXT 
```



COPY

Purpose

To create a new file or a new version of a file at the destination node, use the COPY command. This command can copy files from the local node to the remote node, and from the remote node to the local node.

Format

COPY[/qualifier] infile[,infile][,...] outfile[,outfile][,...]

Where:

- qualifier** Is a valid COPY qualifier. The effect of a qualifier depends on whether you are copying a file to or from a remote node.
- /ALLOCATION=number** When you copy a file to a remote node, requests that the new file has an allocation quantity of the specified number in blocks.
The default is 0; the valid range is 0 to 2147483647.
- /ASCII** Copies an ASCII file.
When you copy a file from a remote node, the file's data is not affected if it is in a stream system. For copying ASCII files from a nonstream system, the data is handled by the remote file system and by the remote file's record format and record attributes.
When you copy a file to a remote node, the file has records that end by default with a carriage return and a line feed. If the first record does not end with a carriage return and a line feed, NFT makes a binary copy of the file.
By default, the information from the remote node file is not affected.

- /BLOCK** Copies files as binary files, disregarding the record structure. This qualifier lets you copy files that have undefined formats or long records.
- When you specify the **/BLOCK** qualifier, the following attributes must apply: binary mode, fixed length, and **MRS=512**.
- You cannot use any other qualifier when you use **/BLOCK**.
- /CC=attribute** Sets the record attributes for files that you are copying to RMS file systems only. If you are copying files to a stream system, the record attributes are ignored.
- None – There are no record attributes.
- FTN – The records contain FORTRAN carriage control. These records are not native to the MS-DOS system.
- CR – The records have an implied carriage return and a line feed. This is the default.
- PRN – The records contain a fixed header with a print carriage control. These records are not native to the MS-DOS system. The **/CC=PRN** qualifier is used with the **/VFC** qualifier.
- If you specify an explicit record attribute for the output file, the file data should conform to it. NFT does not convert the data.
- /DELETE** Used after the **/PRINT** qualifier, copies the file, prints the file, then deletes the copied file.
- /FIXED** Indicates the records for a file being copied to a remote node have the same length. By default, the length is 128 bytes; you can change the length with the **/MRS** qualifier.

/IMAGE	<p>Copies a binary (image) file.</p> <p>When you copy a file to or from a remote node, the file's data is not affected.</p> <p>For copying a file to a remote node, the default record format is fixed; the default Maximum Record Size (MRS) is 128 bytes. You can change these defaults with the /VARIABLE or /VFC and /MRS qualifiers. The last record can be shorter than the previous records.</p> <p>By default, the information from the remote node file is not affected when you copy a file from a remote node.</p> <p>When you copy a file to a remote node and do not specify the /ASCII or /IMAGE qualifier, NFT examines the file. If the first 512 bytes contain a carriage return and a line feed, the file is copied as an ASCII file. If the first 512 bytes do not contain a carriage return and a line feed, the file is copied as a binary file.</p>
/LSA	<p>Indicates that a file, written to a remote node, is in line-sequenced ASCII format. LSA files are valid for remote systems, but not for MS-DOS systems.</p>
/MACY11	<p>Indicates that a file, written to a remote node, is in MACY11 format. MACY11 files are valid for remote systems, but not for MS-DOS systems.</p>
/MRS=number	<p>Sets the Maximum Record Size.</p> <p>For variable length records, there is no maximum range. The default is 0. For fixed length records, the valid range is 0 to 32767. The default is 128.</p>
/NOLOG	<p>Disables printing a notification line when the COPY command is executed.</p>

/NOSPAN	Requests that records do not span blocks. This qualifier is valid for RMS systems only.
/PRINT	Prints a file on the remote node's default printer after the file is copied to a remote node.
/SUBMIT	Submits a batch file to run on the remote node.
/VARIABLE	For copying a file to an RMS system, resets the record format (RFM) to variable length records with a Maximum Record Size of 0. To change the Maximum Record Size, use the /MRS qualifier.
/VFC=number	For copying a file to an RMS file system, sets the record format (RFM) to variable length records with fixed control headers whose length you specify. The valid range is 0 to 255 bytes. The default is 2. For copying a file to a stream system, this qualifier has no effect.
infile	Specifies the input file to be copied. If you specify more than one input file, you must separate the files with commas. There is a limit of 10 file names for each list.
outfile	Specifies the name of the output file.

Comments

The local file specification has one of two forms. In its longest form, it consists of the drive name, directory path, file name, and file extension.

In its shortest form, it consists of the file name and file extension. This form assumes that the file is in the current default MS-DOS directory.



The remote file specification has one of two forms. In its longest form, it consists of node name and access control information followed by a file specification appropriate to the remote node.

In its shortest form, it consists of a node name, followed by a file specification appropriate to the remote node.

You can copy one to ten input files to output files. The input and output files must be separated by commas, and the first input file sets default attributes for the following input files.

If outfile's file name and file extension are missing, they are assumed to be the same as the file name and file extension for infile.

NFT truncates all file names to eight characters, and all file extensions to three characters. For example, NFT copies a remote file named THISIS-MYFILENAME.RIGHTHERE;1 to THISISMY.RIG.

The DECnet-VAXmate operating system overwrites files that have the same name. For example, NFT copies a file named THISISMYOTHERFILE-NAME.RIGHTHERE;1 to THISISMY.RIG, then MS-DOS overwrites other files with the same name.

Example 1

To copy a single file from one node to another, type:

```
NFT> COPY SAM.TXT LONDON::SAM.TXT 
```

Example 2

To copy more than one input file to the same number of output files, type:

```
NFT> COPY LONDON::SAM.TXT,SHAMI.TXT SAM.TXT,SHAMI.TXT 
```

Example 3

To copy all files with the file extension SUM from a local node to the node LONDON and name them the same file names, type:

```
NFT>COPY *.SUM LONDON:*.SUM
```

Example 4

To copy the local file PAGE1.TXT to the remote node LONDON, name it the same file name, then print the file on the remote printer and delete it from the remote node, type:

```
NFT>COPY/PRINT/DELETE PAGE1.TXT LONDON: (Return)
```

Example 5

To copy the local file PAGE1.TXT to the remote node LONDON, name it TRIP.TXT, then print it on the remote printer and delete it from the remote node, type:

```
NFT>COPY/PRINT/DELETE PAGE1.TXT LONDON:TRIP.TXT;1 (Return)
```

Example 6

To copy a local MS-DOS file called EMPLOY.LST to a remote VMS node named BATH and store the file on the remote node as NAMES.EMP;1, type:

```
NFT>COPY A:EMPLOY.LST <LF>  
BATH"IRON BOATS":SCRB:[IRON]NAMES.EMP;1 (Return)
```

||||| *DELETE*

DELETE

Purpose

To delete one or more local or remote files, use the DELETE command.

Format

DELETE[/NOLOG] file

Where:

- file Is any valid local or remote file specification.
- /NOLOG Disables printing a notification line when the DELETE command is executed.

Comments

You can only delete multiple files using wildcards. You cannot delete a list of files.

When you delete multiple files using only wildcards to specify the file names, NFT displays the prompt, "Are you sure (Y/N)?" Type Y to delete the files.

Example 1

To delete the file TAX.LST;3 from the directory MONEY on the remote VMS node LONDON, type:

```
NFT>DELETE LONDON::[MONEY]TAX.LST;3 
```

Example 2

To delete all versions of all files, located in the directory TRAVEL on the node ROME, that have the file extension DOC, type:

```
NFT>DELETE ROME::[TRAVEL]*.DOC;* 
```

Example 3

To delete all the files in the directory TRAVEL on the node ROME, type:

```
NFT>DELETE ROME::[TRAVEL]*.*;*   
Are you sure (Y/N)? Y 
```

DIRECTORY

Purpose

To list local or remote file names, including the size (in blocks) and the time and date the file was last modified or created, use the DIRECTORY command.

Format

DIRECTORY[/qualifier] [file]

Where:

/qualifier Is a valid DIRECTORY qualifier.

/BRIEF Displays only the name of one or more files.

/FULL Displays complete file information for one or more files. The information for each file includes: file name; file size; file owner; date and time the file was last modified or created; the type of file organization, record format, and record attributes; and the file protection.

file Is any valid local or remote file specification. If you omit the filespecification, NFT assumes the local disk and the current default directory.

Comments

If you type the DIRECTORY/FULL command for a file on a remote node, all the information for the directory is displayed.

If you type the DIRECTORY/FULL command for a file on a local node, only the size of the file and the time and date the file was last modified or created is displayed.

If a file name contains more than 19 characters, NFT truncates the name to eight characters in the directory listing.



DIRECTORY

Example 1

To display the file name TAX.LST;4 on node LONDON, type:

```
NFT> DIRECTORY LONDON::TAX.LST;4 
```

```
Directory of: LONDON"SMITH password"::SYS$SYSROOT:[SMITH]
```

```
TAX.LST;4          20          09-JUL-85      12:30:52
```

Example 2

To display complete information for the file REPORT.DAT on the remote node LONDON, type:

```
NFT> DIRECTORY/FULL LONDON::REPORT.DAT;4 
```

```
Directory of: LONDON"SMITH password"::SYS$SYSROOT:[SMITH]
```

```
REPORT.DAT;4
```

```
Size:      8/9          Owner:  [910,20]
```

```
Created:    22-MAR-85 15:38:36
```

```
File organization:  Sequential
```

```
Record Format:  Variable length, maximum 128 bytes
```

```
Record Attributes:  Carriage return carriage control
```

```
File protection:   System: RWED, Owner:RWED, Group:RW, World:R
```

Example 3

To list briefly all the file names on the node LONDON, type:

```
NFT> DIRECTORY/BRIEF LONDON:: 
```

```
Directory of: LONDON"SMITH password"::SYS$SYSROOT:[SMITH]
```

```
APNDXA.DOC;3      CHAP1.DOC;2      CHAP2.DOC;13     DATA.DAT;9  
NEWS.DOC;10      MEMO.TXT;1       TEST2.TST;6      TEST3.TST;2  
TEXT.DOC;8
```

EXIT

Purpose

To exit from an NFT operation and return control to the MS-DOS operating system, use the EXIT command.

Format

EXIT

Comments

In addition to using the EXIT command, you can press Ctrl/Z to exit from NFT.

Example

To exit from the NFT utility, type:

NFT> EXIT



HELP

Purpose

To display information about NFT commands and qualifiers, use the **HELP** command.

Format

HELP [/qualifier] command

Where:

command Is any valid NFT command verb.

qualifier Is any qualifier acceptable to NFT commands.

Example 1

To display a summary of all NFT commands, type:

```
NFT> HELP 
```

Example 2

To display a summary of the **SHOW** command, type:

```
NFT> HELP SHOW 
```

Example 3

To display a summary of the effects of the **/ASCII** qualifier, type:

```
NFT> HELP /ASCII 
```

PRINT

Purpose

To queue a remote file to a remote printer, use the PRINT command. The remote printer is the system's default printer.

Format

PRINT[/qualifier] file

Where:

/qualifier Is a valid PRINT qualifier.

/DELETE Deletes the file from the remote node after the file is printed.

/NOLOG Disables printing a notification line when the PRINT command is executed.

file Is any valid remote file specification.

Comments

You cannot print files using wildcards, and you cannot print a list of files.

Example 1

To print the file TAX.LST;3 on the remote VMS node LONDON to the default system printer for LONDON, type:

```
NFT> PRINT LONDON::TAX.LST;3 
```

Example 2

To print the file CHAPTER1.MEM, located on the remote node ROME, to the default system printer for ROME, type:

```
NFT> PRINT ROME::CHAPTER1.MEM 
```



SET

Purpose

To set default access control information and disk and directory information, use the SET command. You can set default information for a maximum of ten nodes.

Format

SET node::

Where:

node Is a remote node name.

file Is the file specification. It includes disk and directory information for the remote node; it does not include the file name and version number.

Example 1

To set default access control information for the node LONDON, the disk SYS\$USER_DISK, and the subdirectory USER.FILES, type:

```
NFT> SET LONDON"SMITH OPEN"::SYS$USER_DISK:[USER.FILES] 
```

Example 2

To set default access control information for the node PARIS, the username JONES, and the password NEW, type:

```
NFT> SET PARIS"JONES NEW":: 
```

SHOW

Purpose

To display the temporary default table of remote access control information, use the SHOW command.

Format

SHOW [node::]

Where:

node:: Is a valid remote node name.

If you do not specify a node name, NFT displays the contents of the access control information table for all nodes in the NFT temporary default table.

Comments

If NFT does not find the specified node name in the table, it checks to see if you used NCP to define the default remote access control information.

Example 1

To display the contents of the access control information table for all nodes known to NFT, type:

```
NFT> SHOW 
```

Example 2

To display the access control information for the node LONDON, type:

```
NFT> SHOW LONDON:: 
```



SUBMIT

Purpose

To request that a command file run on a remote node, use the SUBMIT command. The specified remote node must support command file submission and execution.

Format

SUBMIT[/NOLOG] file

Where:

/NOLOG Disables printing a notification line when the SUBMIT command is executed.

file Is the remote file specification.

Comments

Command files contain one or more commands that are recognized and run by the remote node's operating system. Therefore, the commands must conform to the standards of the remote system.

The remote file specification has two formats. In its longest form, it consists of node and access control information, followed by a file specification required by the remote node.

In its shortest form, the file specification consists of a node name, followed by a file specification appropriate to the remote node.

You cannot submit files using wildcards, and you cannot submit a list of files.

Example

To submit the command file BACKUP.COM to run on the remote node PARIS, type:

```
NFT> SUBMIT PARIS::BACKUP.COM 
```

TYPE

Purpose

To display the contents of a local or remote file, use the TYPE command. You should use this command only for ASCII files.

Format

TYPE file[,file][,...]

Where:


file Is any valid local or remote file specification.

Comments

You can type one to ten input files. The input files must be separated by commas, and the first input file sets default attributes for the following input files.

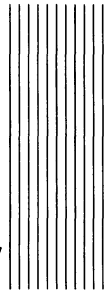
Example

To display the contents of the file PREFACE.DOC, located on the remote node LONDON, type:

```
NFT>TYPE LONDON::PREFACE.DOC 
```


Chapter 35

Connecting to a Remote Host With SETHOST



This chapter describes:

- Using the SETHOST utility with network virtual terminal services
- Using the SETHOST command
- Using the SETHOST menu
- Using Your Workstation as a VT102 Terminal
- Editing text during a remote session
- Exiting from SETHOST

NOTE

You have to execute NET START LAT or NET START RDR before you can use SETHOST.

Using SETHOST

The SETHOST utility connects your system to a host node, enabling the system to emulate a terminal connected to the host node.

When your workstation emulates a host terminal, you can perform standard terminal functions, access resources, and access the DEC Multinational Character Set as if the workstation is a terminal directly connected to the host node.

Each time you log onto a host node, SETHOST creates a connection called a session. With SETHOST, you can create and maintain multiple sessions. The maximum number of sessions depends on:

- The maximum number of network links you have established with the DEFINE EXECUTOR MAXIMUM LINKS command.



For more information about this command, see the *VAXmate System Administrator's Guide*.

- The number of links that are currently active for the virtual disk or the virtual printer.

You can create a session by either of the following protocols:

- LAT

LAT is a local area transport protocol that communicates over the Ethernet only. LAT supports TDMS (Terminal Data Management System) applications. It can only be used for single sessions.

- CTERM

CTERM is a wide area virtual terminal protocol that communicates over both the Ethernet and asynchronous DDCMP (Digital Data Communications Message Protocol); it lets you access the entire DECnet network. CTERM does not support TDMS applications. It can be used for multiple sessions.

When you create a session, SETHOST determines whether LAT is available. If it is available, SETHOST attempts to connect your node to a LAT line. This is the default.

If LAT is not available, SETHOST attempts to connect your node using CTERM. To select CTERM without trying LAT, use the SETHOST /CTERM command.

The first time you run SETHOST from an IBM workstation, it prompts you for the type of keyboard you are using. The SETHOST utility saves this information in a file in the \DECNET directory.

To use SETHOST, the host node must support terminal emulation from remote nodes and run Phase IV of the DECnet software on one of the following operating systems:

- VAX/VMS, Version 4.0 or later
- RSX-11M-PLUS, Version 3.0 or later
- RSX-11M, Version 4.2 or later
- Micro-RSX, Version 3.0 or later
- TOPS-10, Version 7.03 or later
- TOPS-20, Version 6.1 or later
- ULTRIX-32, Version 1.1 or later



Using the SETHOST Command

To create, record, and modify your remote sessions, use the SETHOST command. You can specify parameters and qualifiers in the command line or at the SETHOST prompt. When you specify parameters and qualifiers in the command line, you must separate each with a space.

Format

SETHOST {node|latname} [/qualifier]

Where:

node Specifies the DECnet node name or DECnet node number for establishing a remote CTERM session.

Node can also include access control information, such as the user's password or account. The format for access control information is [/USER/PASSWORD/ACCOUNT]. Access control information is only used by ULTRIX hosts.

latname Specifies the LAT service name for establishing a remote LAT session.

LAT service names are defined by accumulation over time by the LAT driver or by the following NCP command:

NCP SET NODE address NAME name LAT

For more information about NCP, see the *VAXmate System Administrator's Guide*.

If the LAT service name you specify with SETHOST is not known by the driver, or if you have not set it with the NCP SET command, the LAT connection can fail.



Connecting to a Remote Host With SETHOST

/qualifier Is a valid SETHOST qualifier.

/ABORT=n	/SAVEDEFAULT
/CTERM	/SERVICE
/EDIT=mode	/SESSION=n
/EXIT	/SETUP
/HELP=topic	/SHOW
/KEYBOARD	/SWITCH
/LOG=filename	/TAKE=filename

The **/EDIT**, **/SAVEDEFAULT**, **/SESSION** and **/SHOW** qualifiers are used with **CTERM** only.

These qualifiers are described individually in the following sections.

The following sections describe the SETHOST qualifiers in more detail.



/ABORT

To abort a session, use the **/ABORT** qualifier. You can abort a single session or all sessions. To view the current sessions, use the **SETHOST /SHOW** command.

Format

/ABORT={n|ALL}

Where:

n Is the specific session number you want to abort.

ALL Aborts all the current sessions.

Comments

You can abort the current session or a session that was saved previously. If you abort the current session, it is deleted, your link disconnects, and SETHOST exits.

Example

To abort session number 3, leaving all other sessions intact, type:

```
SETHOST /ABORT=3 
```



/CTERM

To use CTERM protocol for the current connection, use the /CTERM qualifier. It overrides the default, which attempts to use LAT protocol first. If the LAT is unavailable or if the LAT attempt fails, CTERM completes the connection. Only CTERM supports multiple sessions.

Format

/CTERM

Example

To connect to the remote session THRUSH using the CTERM protocol, type:

```
SETHOST THRUSH /CTERM 
```

/EDIT

To control the type of command line editing you can perform during your remote session, use the /EDIT qualifier. This qualifier only applies to CTERM hosts or sessions that support command line editing.

Format

/EDIT=mode

Where:

mode Is one of the three modes you can use for editing a command line.

OVERSTRIKE	Inserts the new character to replace the character at the current cursor position.
INSERT	Inserts the new character to the left of the character at the current cursor position.
NONE	Turns off command line editing.



Comments

You can toggle between INSERT and OVERSTRIKE (within a single command line) by pressing Ctrl/A.

The default mode is OVERSTRIKE unless you change it with the /EDIT qualifier, or if it is a saved default (see the /SAVEDEFAULT qualifier for more information). The default editing mode is reset at the beginning of each line.

Example

To change the editing mode to INSERT, type:

```
SETHOST /EDIT=INSERT 
```

/EXIT

To exit from SETHOST, use the /EXIT qualifier. You enter this qualifier after you type the SETHOST command.

Format

/EXIT

Example

To start SETHOST, request help for NODESPEC, then exit from SETHOST, type:

```
SETHOST 
```

```
SETHOST> /HELP=NODESPEC 
```

```
·  
·  
·
```

```
SETHOST> /EXIT 
```



/HELP

To display the main help text screen for SETHOST, use the /HELP qualifier. You can also get help on specific topics.

Format

/HELP=topic

Where:

topic Is one of the specific SETHOST options for which you can view help text. The SETHOST help topics are:

- nodespec @ * ?
- /SESSION /TAKE /LOG /HELP
- /SAVEDEFAULT /SHOW /EDIT /ABORT
- /EXIT /CTERM /KEYBOARD /SWITCH
- /SERVICE /SETUP
- context-switching syntax
- changing-default-line-editing-mode

Example

To display help text for the syntax of the SETHOST qualifiers, type:

```
SETHOST /HELP=syntax Return
```



/KEYBOARD

To change the default keyboard, use the /KEYBOARD qualifier.

Format

/KEYBOARD

Comments

The first time you run SETHOST from an IBM workstation, it prompts you for the type of keyboard you are using. To change your keyboard type at a later date, use the /KEYBOARD qualifier to display the SETHOST keyboard menu. You can select your keyboard type from the menu.

The \DECNET directory contains keyboard files that show the position of the DIGITAL keys on each keyboard. These files have the files extension .HLP.

Example

To start a SETHOST session and request a change of keyboard type, type:

```
SETHOST /KEYBOARD 
```

/LOG

To record the terminal session in a log file, use the /LOG qualifier.

Format

/LOG[=filename]

Where:

filename Is the name of the file for recording your session. You can specify a maximum of 8 characters for the name and 3 characters for the file extension. The default file name is SESSION.LOG.

Example

To specify SESSION4.LOG as the file for recording the session, type:

```
SETHOST /LOG=SESSION4.LOG 
```




/SAVEDEFAULT

To save the /EDIT or /CTERM qualifier settings as the default for all future sessions, use the /SAVEDEFAULT qualifier. If you specify this qualifier and do not specify any editing qualifiers to be saved, the command has no effect.

When you specify /SAVEDEFAULT, SETHOST places your specified qualifier settings in a file called SETHOST.DEF in the DECnet directory. SETHOST reads this file whenever you start SETHOST.

Format

/SAVEDEFAULT [/EDIT] [/CTERM]

Example

To save the edit mode INSERT as the default in the SETHOST.DEF file, type:

```
SETHOST /EDIT=INSERT /SAVEDEFAULT 
```

/SERVICE

To display the workstation's LAT driver service-name table, use the /SERVICE qualifier.

Format

/SERVICE

Comments

The LAT driver service name table lists the services that are available to the LAT. To connect to any of the services, use the LAT protocol and the SETHOST command with the latname parameter.

Example

To display the LAT driver service name table, type:

```
SETHOST/SERVICE 
```



/SESSION

To specify the session number so you can reconnect to a host computer, use the /SESSION qualifier.

Format

/SESSION=*n*

Where:

n Is the session number you use to reconnect to the host computer.

Comments

Use the /SESSION qualifier only when you used the /CTERM qualifier to connect to the host computer.

You can use the /SHOW qualifier to find which multiple sessions are available. You can use the /SESSIONS qualifier to reconnect to a particular session.

Example

To reconnect to session number 2, type.

```
SETHOST/SESSION=2 
```



/SETUP

To start the Set-Up utility, use the /SETUP qualifier.

Format

/SETUP

Comments

Use the arrow keys to move among options in the Set-Up utility menu. Press the Return key or the Enter key to select the option you want.

To select character sets, use the General menu.

To save the new default values, select the Save Parameters command from the Action menu.

Example

To start the Set-Up utility for a SETHOST session, type:

SETHOST/SETUP



/SHOW

To list the current sessions and the hosts that connect them to your node, use the **/SHOW** qualifier. This qualifier only works if you are connected to the host with **CTERM**.

Format

/SHOW

Example

To display the current sessions on the hosts **CLOUD** and **SUN**, type:

```
SETHOST /SHOW 
```

Session	Host
1	CLOUD
2	SUN

/SWITCH

To set the character you use to access the **SETHOST** menu, use the **/SWITCH** qualifier. The default is **Ctrl/4**. Use the **/SWITCH** qualifier if you want to change the default.

Format

/SWITCH=n

Where:

n Is the ASCII decimal character (1-26) to which you want to change the first character. ASCII character 1 is equivalent to A; character 2 is equivalent to B, and so on.

Example

The following command changes the default for accessing the **SETHOST** menu, **Ctrl/4**, to **Ctrl B**:

```
SETHOST/SWITCH=2 
```



Connecting to a Remote Host With SETHOST

/TAKE

To send text from a local file to the remote node as if you typed it at the remote node's keyboard, use the **/TAKE** qualifier.

You must leave a space after the name of the remote node.

NOTE

Some remote systems or services may not be able to process more than one line of text correctly.

Format

/TAKE[=filename]

Where:

filename Is the name of the file containing the text you want to send to the remote node. The default file name is **SESSION.BAT**.

Example

To take text from the file **SESSCOM.BAT** and send it to node **WINTER**, type:

```
SETHOST WINTER /TAKE=SESSCOM.BAT 
```



Using the SETHOST Menu

The SETHOST menu is displayed when you interrupt a session by pressing Ctrl/4. The SETHOST menu lists various options for recording or changing your remote session.

The following example illustrates a sample SETHOST menu.

```
$ Ctrl/4 <Return>
<Return> to exit SETHOST
<H>elp
<L>og session      off
<R>econnect to session 1
<E>diting mode is overstrike
<S>ession
<A>bort session
<N>ew session
Command:
```

The angle brackets indicate the key or letter you need to press to request one of the menu functions. Type only the first letter of the command you want to specify. You do not need to press the Return key after you enter the letter.

The Editing mode option applies only to CTERM hosts or sessions that support command line editing.

The following sections describe each of the menu options in more detail.

Return Option

When using CTERM, to save the current session and exit from SETHOST, use the Return key. To return to the current session or re-establish a previous session, type SETHOST and the appropriate session number. For example, to reestablish session number 2, type:

```
C:>SETHOST /SESSION=2
```

When you are using LAT, the Return key disconnects you from the host and does not save the session.



Logging off the remote host does not save the current session.

To see the saved sessions, type SETHOST and press the Return key. The system displays a listing of available session numbers, as well as the host system to which they are connected.

(H)elp Option

To display the help text for the SETHOST menu, use the Help option.

(L)og Option

The Log option records your entire session in a file. Pressing the L key toggles the Log option between ON and OFF. If the menu displays “Log session off” and you press the L key, SETHOST changes logging to ON and prompts you for the file name for recording the session. The default file name is SESSION.LOG.

When you redisplay the SETHOST menu, the Log option displays “Log session on” with the specified file name.

If the menu displays “Log session on filename” and you press the L key, SETHOST changes logging to OFF and closes the log file. When you redisplay the SETHOST menu, the Log option displays “Log session off”.

(R)econnect Option

The Reconnect option exits from the SETHOST menu and returns you to the current session, indicated in the menu. In the preceding menu example, the session number is 1.

(E)dit Option

The Edit option changes the default mode for command line editing. This option only applies to CTERM hosts or sessions that support command line editing.



When you select the Edit option, SETHOST displays a submenu with options. Table 35-1 describes the Edit submenu options.

Table 35-1 Options for the Edit Submenu

Submenu Option	Description
OVERSTRIKE	Inserts the new character to replace the character at the current cursor position
INSERT	Inserts the new character to the left of the character at the current cursor position
NONE	Turns off command line editing

(S)ession Option

The Session option connects you to another session that you have previously saved. This option only applies to CTERM hosts or systems that support multiple sessions.

When you select this option, SETHOST displays a list of the available sessions. You are prompted for the session number to which you want to connect.

(A)abort Session Option

The Abort Session option aborts a single session. You can abort the current session or a session that you previously saved.

When you select this option, SETHOST prompts you for the number of the session to be aborted. If you abort the current session, indicated by “<R>econnect to session n”, it is deleted, your link is disconnected, and SETHOST exits.

(N)ew Session Option

The New Session option begins a new session. When you select this option, you are prompted for a node name or a LAT service name for starting the next session.



Using Your Workstation as a VT102 Terminal

The SETHOST Set-Up utility enables your workstation to emulate a VT102 terminal. Some of the features that you can set are:

- Cursor style (block or underline)
- Screen background (dark or light)
- Automatic repeating of keyboard keys

We recommend that you do not change the settings for terminal features unless you are familiar with DECnet concepts. If you are not familiar with these concepts, contact your system administrator.

Entering Set-Up Mode

Before you can enter Set-Up mode, your workstation must be connected to a host computer.

To enter Set-Up mode, press the F3 key. Your workstation displays the first Set-Up screen, which is the Set-Up Directory. This directory has five major headings, each representing a function.

Each major heading includes Set-Up menus for changing parameters that control how your terminal is set. The major headings and their corresponding Set-Up menus are:

Set-Up Directory

Action
Display
General
Screen
Exit

Action Set-Up

Main Directory
Clear Display
Factory Parameters
Save Parameters
Recall Parameters



Display Set-Up

Main Directory
No/Auto Wrap
Dark Text, Light Screen/Light Text, Dark Screen
No/Text Cursor
Block Cursor Style/Underline Cursor

General Set-Up

Main Directory
VT52 Mode/VT100 Mode
Return = CR/Return = CR/LF
Numeric Keypad/Application Keypad
Normal Cursor Keys/Application Cursor Keys

NOTE

The numeric keypad causes the auxiliary keypad to transmit ASCII character codes that correspond to the numeric characters on the key.

The application keypad causes the auxiliary keypad to transmit control codes used by an application program.

The normal cursor keys transmit ANSI cursor control sequences (up, down, left, and right).

The application cursor keys transmit application program control functions.

Screen Set-Up

Main Directory
Color enabled/black/white
Screen foreground color
Screen background color
Pulldown foreground color
Pulldown background color

When using the Screen Set-Up menu, you can only set the “Color black/white” parameter for your workstation.



Selecting a Set-Up Menu

The Set-Up menus are listed as parameters in the Set-Up directory. To select a Set-Up menu, use the arrow keys to move to the specific menu. When you select a menu, it is displayed in reverse video. To invoke that menu, press the Enter key.

To select a parameter from the selected Set-Up menu, use the arrow keys. When you select a parameter, it is displayed in reverse video. To change the parameter's value or to perform its function, press the Enter key.

For example, to select a block cursor style:

1. Press the F3 key to invoke the Set-Up directory.
2. Select the Display parameter by pressing the right arrow key. The parameter is displayed in reverse video.
3. Press the Enter key to move to the Display Set-Up menu.
4. Press the appropriate arrow keys to move to the block cursor style parameter.
5. Press the Enter key to change this value.

The selected value is displayed in reverse video.

6. Press the F3 key to exit from the Set-Up directory.

Saving Set-Up Values

To save the parameter settings that you selected in Set-Up mode, select the Save Parameters option from the Action Set-Up menu. This option places the current parameters in the DECnet directory in a file called VT102.DAT.

By storing the parameters in this file, SETHOST can restore saved parameters when it runs from any directory.



Using Set-Up Values

If you do not save parameters after you change them, your workstation uses the new values until you:

- Change the Set-Up features again
- Exit from SETHOST or turn your workstation off
- Recall the original features by selecting the Factory Parameters from the Action Set-Up menu
- Run an application that changes the features

Recalling Set-Up Values

If you save parameters, they are automatically read when you run the SETHOST utility. To recall the values you previously stored in the VT102.DAT file in the DECnet directory, select the Recall Parameters Set-Up menu.

Exiting From Set-Up Mode

To exit from Set-Up mode, press the F3 key or select the Exit parameter from the Set-Up menu.



Editing Text During a Remote Session

You can edit text that is typed on the current line during a remote session with one of the following methods:

- Press either the Word Char key or the backspace key to delete the last character you typed.
- Press Ctrl/W to delete the last word you typed.

You can press Ctrl/W as long as this sequence is not required by the program you are running.

- Press Ctrl/U to delete the line you are typing.

You can press Ctrl/U provided this sequence is not required by the program you are running.

The remote host may provide other special characters for editing text.

Disconnecting From a Host

To disconnect from the host and break the logical link connection, either:

- Log off using the standard log-off procedure established for that operating system. This procedure also exits from the SETHOST utility.

For example, to log off the VAX host, type:

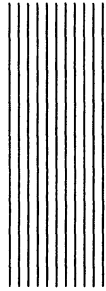
```
$ LOGOUT 
```

- Press Ctrl/4 . You exit from SETHOST, but you save the session and retain a link to the host.

If you then press the A key, the session is deleted, and the link to the host is disconnected.

If the session is the current session (or if you only have one session established), you also exit from SETHOST.

Chapter 36 MS-DOS Editing and Function Keys



This chapter discusses:

- MS-DOS editing keys
- MS-DOS control characters
- Industry standard compose sequences

MS-DOS Editing Keys

The MS-DOS operating system editing keys enable you to:

- Repeat a command line instantly
- Edit and execute a command line with a minimum of typing

When you type a command on the command line and press the Return key, the command line is sent to the command processor for execution. A copy of the command line is also sent to a template, which is a special storage area.

Table 36-1 lists the MS-DOS operating system editing keys you can use to edit or repeat the command line.

Table 36-1 MS-DOS Editing Keys

Key	Editing Function
F1	Copies one character from the template to the command line.
F2 Character	Copies characters up to the specified character in the template and puts these characters on the command line.
F3	Copies all remaining characters in the template to the command line.



Table 36-1 MS-DOS Editing Keys (cont.)

Key	Editing Function
Del	Skips over (does not copy) a character in the template.
F4 Character	Skips over (does not copy) the characters in the template up to the specified character.
Ins	Enters/exits insert mode.
Return	Makes the new line the new template.

Example 1

To display information about the file PROG.COM, type:

```
A:\>DIR PROG.COM Return
```

The command line (DIR PROG.COM) is saved in the template. To repeat the command, press:

F3 **Return**

When you press the F3 key, the contents of the template are copied to the command line. When you press the Return key, the command line is sent to the command processor for execution.

Example 2

To display information about a file named PROG.ASM, use the contents of the template from Example 1 and press:

F2 C

This copies all characters from the template to the command line, up to, but not including, C. The MS-DOS operating system displays:

```
A:\>DIR PROG.
```

Now type:

```
ASM
```



The result is:

```
A:\>DIR PRG.ASM
```

The command line DIR PRG.ASM is now in the template and ready to be sent to the command processor for execution. To execute the command, press:

Return

To cancel the command, press:

Ctrl/C

Control Character Functions

A control character function affects the command line. Table 36-2 contains control character functions.

Table 36-2 Control Character Functions

Control Character	Function
Ctrl/C	Stops the current command.
Ctrl/H	Removes the last character from the command line, and erases the character from the screen.
Ctrl/P	Sends output from the workstation to a local printer only. If you press Ctrl/P again, no more output is sent to the printer.
Ctrl/S	Suspends the display of output on the screen. Press any key to continue.
Ctrl/U	Cancel the current command line.
Ctrl/W	Removes the last word from the current line and from the screen.
Ctrl/Z	Inserts an end-of-file character into the new template.



The Prt Sc Key

You can use the Shift and the Prt Sc keys together to print an image of the information displayed on your workstation screen. However, escape sequences and bolding are not recognized. For example, to print a screen image of the information displayed on your workstation screen, press:

Shift/Prt Sc

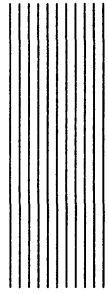
Industry Standard Compose Sequences

You can use industry standard compose sequences on your workstation. Therefore, regardless of the current keyboard map file, you can display the character at a given location.

To display the character at location 124, press and hold the Alt key and press the 1, 2, and 4 keys on the numeric keypad. When you release the Alt key, the character at location 124 is displayed.

Chapter 37

Batch Processing



This chapter discusses:

- Batch processing
- Batch files with replacement parameters
- The AUTOEXEC.BAT file

What Is Batch Processing?

Batch processing enables you to execute a batch of commands as if you typed each command separately on the command line. However, because the commands are in a batch file, you only type the batch file name. Therefore, batch processing saves time and keystrokes.

The REM and PAUSE Commands

You use the REM and PAUSE commands in batch files. The REM command enables you to include remarks and comments in your batch files. These remarks are not executed as commands. The PAUSE command prompts you with an optional message. The PAUSE command also permits you to either continue or stop the batch process at a given point.



Batch File Creation

To create a batch file named NEWDISK.BAT that formats and checks a new diskette:

1. Type:

```
A:\>COPY CON NEWDISK.BAT 
```

This statement tells the MS-DOS operating system to copy the information from the keyboard into the NEWDISK.BAT file.

2. Type:

```
REM This is a file to check new disks   
REM It is named NEWDISK.BAT   
PAUSE Insert new disk in drive A:   
FORMAT A:   
DIR A:   
CHKDSK A: 
```

3. Press:

Batch File Execution

Before you execute a batch process using the MS-DOS operating system, read the following information:

- You only need to type the file name to execute a batch file. If you include the file extension, the MS-DOS operating system also executes the batch file.
- If you press Ctrl/C while the batch file is running, the following message is displayed:

```
Terminate batch job (Y/N)?
```

To stop processing the batch file and return to the MS-DOS operating system prompt, press the Y key.

To continue processing with the next command in the batch file, press the N key.



- If you remove the diskette containing a batch file that is being executed, the MS-DOS operating system prompts you to insert it again before the next command can be read.
- The last command in a batch file can be the name of another batch file. This enables you to call one batch file from another when the first is finished.
- You can redirect output in a batch file using the < and > symbols.

To execute the NEWDISK.BAT file, type:

```
A:\>NEWDISK 
```

Each command is executed as if you entered it from the keyboard.

Batch Files With Replacement Parameters

When used in MS-DOS commands, a parameter is an option that you define. With the MS-DOS operating system, you can create a batch file with replaceable parameters. These parameters, named %0 through %9, can be replaced by values supplied when the batch file executes.

To create a batch file that deletes your destination file from a previous append, appends two files together into a third file, and print the destination file:

1. Type:

```
A:\>COPY CON NEWFILE.BAT 
```

This tells the MS-DOS operating system to copy the information from the keyboard into the NEWFILE.BAT file.

2. Type:

```
DEL %3.DOC   
COPY %1.DOC + %2.DOC %3.DOC   
PRINT %3.DOC 
```

3. Press:



The MS-DOS operating system responds with the following message:

```
1 File(s) copied
A:\>
```

The file NEWFILE.BAT, which consists of three commands, now resides on the disk in the default drive.

The parameters %1 and %2 are replaced sequentially by the parameters you supply when you execute the file. The parameter %0 is always replaced by the drive designator, if specified, and the file name of the batch file (for example, NEWFILE).

You can specify a maximum 10 replacement parameters (%0 through %9). Each command line, including those generated by replacement characters, can contain 1 to 128 characters.

NOTE

To use a percent sign in a file name within a batch file, you must type the percent sign twice.

Executing NEWFILE.BAT

To execute the NEWFILE batch process, type:

```
A:\>NEWFILE A:MEMO1 B:MEMO2 B:BIGFILE 
```

A:MEMO1 is substituted for %1, B:MEMO2 for %2, and B:BIGFILE for %3.

The result is the same as if you typed:

```
A:\>DEL B:BIGFILE 
A:\>COPY A:MEMO1 + B:MEMO2 B:BIGFILE 
A:\>PRINT B:BIGFILE 
```

The replacement parameter %0 is always replaced by whatever you type to invoke the batch file. If you do not refer to the batch file, start your replacement parameters with %1.



The AUTOEXEC.BAT File

Use an AUTOEXEC.BAT file to execute programs automatically whenever you start the MS-DOS operating system.

When you start the MS-DOS operating system, the command processor searches the MS-DOS operating system disk for a file named AUTOEXEC.BAT. If the AUTOEXEC.BAT file is found, it is executed automatically.

If the AUTOEXEC.BAT file is not found, the date and time prompts are displayed.

The AUTOEXEC.BAT file must be located in your root directory.

CAUTION

We recommend you do not change your AUTOEXEC.BAT file if you are using your workstation in a network environment.

Creating an AUTOEXEC.BAT File

To create an AUTOEXEC.BAT file that changes your MS-DOS operating system prompt, reads the COMMAND.COM file on drive C, and prompts you for the date and the time,

1. Type:

```
A:\>COPY CON AUTOEXEC.BAT 
```

This statement tells the MS-DOS operating system to copy the information from the keyboard into the AUTOEXEC.BAT file.

2. Type:

```
PROMPT $P$G   
SET COMSPEC=A:\COMMAND.COM   
DATE   
TIME 
```

3. Press:



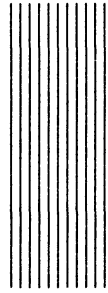
NOTE

If you use an AUTOEXEC.BAT file, the MS-DOS operating system does not prompt you for a current date and time unless you include the DATE and TIME commands in the AUTOEXEC.BAT file. You should include these two commands in your AUTOEXEC.BAT file, because the MS-DOS operating system uses this information to keep your directory current.

If your workstation has the optional expansion box containing a battery, the date and time are set automatically.

Chapter 38

Redirecting Input and Output



This chapter discusses:

- Redirecting input and output
- Using filters
- Using pipes

The MS-DOS operating system assumes that input comes from the keyboard and that output goes to the workstation screen. However, using the less-than sign (<) and the greater-than sign (>), you can redirect the flow of command input and output.

Table 38-1 describes the options for redirecting input and output.

Table 38-1 Options for Redirecting Input and Output

Option	Description
<	Gets input for a command from a file.
>	Sends output of a command to a file.
>>	Appends the output from a command to the end of a file.



Redirecting Input

Use the less-than sign (<) to send input to a command from a file. For example, to send a list of names in the file named NAMES.TXT to the SORT command, type:

```
A:\>SORT < NAMES.TXT 
```

The SORT command sorts the names in the file named NAMES.TXT and displays the sorted names on the workstation screen.

Redirecting Output

Use the greater-than sign (>) to send output from a command to a file. For example, to send the DIR command output to a file named NEWFILES.TXT, type:

```
A:\>DIR > NEWFILES.TXT 
```

If the file named NEWFILES.TXT does not exist, the MS-DOS operating system creates it and stores your directory listing in it.

If the file named NEWFILES.TXT exists, the MS-DOS operating system overwrites the old data with the new data.

You can redirect input to a command and redirect the output to a file. For example, to sort the names in the file named NAMES.TXT and send the sorted output to the file named LIST1.TXT, type:

```
A:\>SORT < NAMES.TXT > LIST1.TXT 
```

To append information to another file, use two greater-than signs (>>). Two greater-than signs tell the MS-DOS operating system to append the output of the command (such as a directory listing) to the end of the specified file. For example, to append a directory listing to the existing information in a file named NEWFILES.TXT, type:

```
A:\>DIR >> NEWFILES.TXT 
```

If the file named NEWFILES.TXT does not exist, it is created.



Filters

A filter is a command that reads input, acts upon it, and then transmits it, usually to your workstation or to a file. Because filters can be put together in many different ways, a few filters can take the place of a large number of specific commands.

The MS-DOS operating system filters are MORE and SORT. The MORE filter displays output one screen at a time. The SORT filter sorts text.

Pipes

A pipe is a method for using more than one command at a time. For example, you can send the output from one program to another program as input. A typical case is a program that produces output in columns. You can use a pipe to sort the output before it is displayed on the screen.

You pipe by separating commands with the pipe separator (`|`). For example, to display an alphabetically sorted listing of your directory, type:

```
A:\> DIR | SORT 
```

The vertical bar causes all output generated by the left side of the bar to be sent to the right side of the bar for processing.

You can also use piping to send data to a file. For example, to sort a directory listing and send it to a file named DIREC.FIL, type:

```
A:\> DIR | SORT > DIREC.FIL 
```

To sort a directory listing and send it to a file named DIREC.FIL on drive C, type:

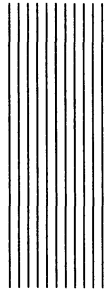
```
A:\> DIR | SORT > C:DIREC.FIL 
```

A pipe can consist of more than two commands. For example, to sort your directory, display one screen at a time, and display `-MORE-` at the bottom of the screen, type:

```
A:\> DIR | SORT | MORE 
```


Chapter 39

DEBUG



This chapter discusses:

- DEBUG program headers
- Information common to all DEBUG commands
- Specific DEBUG commands

DEBUG Program Headers

When you start DEBUG, it sets up a program header at offset 0 in its program work area. Previous versions allowed you to overwrite the program header without problems. This is still true for the default program header if you start DEBUG and specify no file name.

If you debug a .COM or .EXE file, you must not tamper with the program header of the program below address 5CH. If you do, the system will probably crash.

Do not try to restart a program once the “program terminated normally” message is displayed. To restart a program, first reload it using the NAME and LOAD commands.

Information Common to All DEBUG Commands

Each DEBUG command consists of a single letter followed by one or more parameters.

You can use any combination of uppercase and lowercase letters in commands and parameters.

All DEBUG commands accept parameters, except the QUIT command. You can separate parameters by delimiters (spaces or commas), but a delimiter is required only between two consecutive hexadecimal values. Thus, the following commands are equivalent:

```

dcs:100 110
d cs:100 110
d,cs:100,110

```

Table 39-1 lists the DEBUG commands and their formats.

Table 39-1 DEBUG Commands

Command	Format
Assemble	A [<address>]
Compare	C <range> <address>
Dump	D [<range>]
Enter	E <address> [<list>]
Fill	F <range> <list>
Go	G [=<address1> [<address2>...]]
Hex	H <value1> <value2>
Input	I <value>
Load	L [<address> [<drive> <record1> <record2>]]
Move	M <range> <address>
Name	N <filename> [<filename>]
Output	O <value> <byte>
Ptrace	P [=<address>] [<value>]
Quit	Q
Register	R [<registername>]
Search	S <range> <list>
Trace	T [=<address>] [<value>]
Unassemble	U [<range>]
Write	W [<address> [<drive> <record1> <record2>]]

ASSEMBLE

Purpose

To assemble 8086/8087/8088 mnemonics directly into memory, use the ASSEMBLE command.

Format

A [<address>]

Where:

<address> Is a two-part designation consisting of either an alphabetic segment register plus an offset value or a four-digit segment address plus an offset value. The default segment is DS.

Comments

All numeric values are hexadecimal and can be entered as 1 to 4 characters.

If a syntax error is encountered, DEBUG responds with ^ Error and redisplay the current assembly address. For example:

```
dc5:100 cs:110
    ^ Error
```

Enter prefix mnemonics in front of the opcode to which they refer. You can also enter them on a separate line.

The segment override mnemonics are CS:, DS:, ES:, and SS:.

String manipulation mnemonics must explicitly state the string size. For example, the MOVSW must move word strings and MOVSB must move byte strings.

|||| ASSEMBLE

The mnemonic for the far return is RETF.

The assembler automatically assembles short, near or far jumps and calls depending on the byte displacement to the destination address. You can override these with the NEAR or FAR prefix. For example:

```
0CBE:0500 JMP    502        ; a 2 byte short jump
0CBE:0502 JMP    NEAR 505   ; a 3 byte near jump
0CBE:0505 JMP    FAR 50A    ; a 5 byte far jump
```

The NEAR prefix can be abbreviated to NE.

DEBUG cannot tell whether some operands refer to a word memory location or a byte memory location. In this case, the data type must be explicitly stated with the prefix WORD PTR or BYTE PTR. DEBUG also accepts the abbreviations WO and BY. For example:

```
NEG    BYTE PTR [128]
DEC    WD [51]
```

DEBUG cannot tell whether an operand refers to a memory location or to an immediate operand. DEBUG uses the common convention that operands enclosed in square brackets refer to memory. For example:

```
MOV    AX,21    ;Load AX with 21H
MOV    AX,[21]  ;Load AX with the contents
                ;of memory location 21H
```

The DB opcode assembles byte values directly into memory.

```
DB    1,2,3,4,"THIS IS AN EXAMPLE"
DB    'THIS IS A QUOTE: "'
DB    "THIS IS A QUOTE: '"
```

The DW opcode assembles word values directly into memory. For example:

```
DW    1000,2000,3000,"BACH"
```

DEBUG supports all forms of the register indirect commands. For example:

```
ADD    BX,34[BP+2].[SI-1]
POP    [BP+DI]
PUSH   [SI]
```

DEBUG supports all opcode synonyms. For example:

```
LOOPZ  100
LOOPE  100

JA     200
JNBE   200
```

For 8087 opcodes, you must explicitly specify the WAIT or FWAIT prefix.
For example:

```
FWAIT FADD ST,ST(3)    ; This line will assemble a FWAIT prefix
FLD  TBYTE PTR [BX]   ; This line will not
```


 **COMPARE****COMPARE***Purpose*

To compare a portion of memory specified by <range> to a portion of the same size beginning at <address>, use the COMPARE command.

Format

C <range> <address>

Where:

- <range> Is either <address><address> or <address>L<value>. <Value> is the number of lines the COMPARE command should compare. A length of 80 is assumed. If another hex value follows <range>, you cannot use the form <address>L<value> because the second hex value is interpreted as the second address.
- <address> Is a two-part designation consisting of either an alphabetic segment register plus an offset value, or a four-digit segment address plus an offset value. The default segment is DS.

Comments

If the two areas of memory are identical, DEBUG displays its prompt. If there are differences, they are displayed:

address1 byte1 byte2 address2

Example

To compare the block of memory from 100H to 1FFH with the block of memory from 200H to 2FFH, type:

```
C100,1FF 200
0CBE:0100 41 52 0CBE:0200
0CBE:0101 52 41 0CBE:0201
0CBE:0102 43 45 0CBE:0202
0CBE:0103 45 54 0CBE:0203
0CBE:0104 49 47 0CBE:0204
0CBE:0105 53 43 0CBE:0205
0CBE:0106 55 51 0CBE:0206
0CBE:0107 48 47 0CBE:0207
0CBE:0108 40 49 0CBE:0208
0CBE:0109 42 54 0CBE:0209
0CBE:010A 41 55 0CBE:020A
0CBE:010B 47 51 0CBE:020B
0CBE:010C 46 49 0CBE:020C
0CBE:010D 53 52 0CBE:020D
0CBE:010E 55 50 0CBE:020E
0CBE:010F 41 43 0CBE:020F
.
.
.
0CBE:01FF 41 8B 0CBE:02FF
```



DUMP

Purpose

To display the contents of the specified region of memory, use the DUMP command.

Format

D [*<range>*]

Where:

<range> Is either *<address><address>* or *<address>L<value>*. *<Value>* is the number of lines the DUMP command should work on. A length of 80 is assumed. If another hex value follows *<range>*, you cannot use the form *<address>L<value>*, because the second hex value is interpreted as the second address.

Comments

If you specify a range of addresses, the contents of the range are displayed. If you type the D command without parameters, 128 bytes are displayed at the first address (DS:100) after the address displayed by the previous DUMP command.

The DUMP command is displayed in two portions: a hexadecimal dump (each byte is shown as a hexadecimal value) and an ASCII dump (the bytes are shown in ASCII characters). Nonprinting characters are denoted by a period (.) in the ASCII portion of the display. Each display line shows 16 bytes with a hyphen between the eighth and ninth bytes. At times, displays are split in this manual to fit them on the page. Each displayed line begins on a 16-byte boundary.

Example 1

To display the contents of the 10 bytes at CS:100 through CS:110, type:

```
DCS:100 110 
0CBE:0100  37 50 83 C4 02 B8 FF FF-5E 8B E5 5D C3 55 8B EC
```

Example 2

To display the contents of 128 bytes in memory, type:

```
D 
```

Each line of the display begins with an address, incremented by 16 from the address on the previous line. Each subsequent D (typed without parameters) displays the bytes immediately following the previous bytes displayed.

Example 3

To display 20H bytes in memory, type:

```
DCS:100 L 20 
0CBE:0100  37 50 83 C4 02 B8 FF FF-5E 8B E5 5D C3 55 8B EC
0CBE:0110  5A E8 04 01 56 33 C0 50-8B 50 04 D1 E3 FF B7 9B
```

If you then type the command:

```
DCS:100 115 
0CBE:0100  37 50 83 C4 02 B8 FF FF-5E 8B E5 5D C3 55 8B EC
0CBE:0110  5A E8 04 01 56 33
```

the display is formatted as described above, but all the bytes in the range of lines from 100H to 115H in the CS segment are displayed.



ENTER

Purpose

To enter byte values into memory at the specified address, use the ENTER command.

Format

E <address> [<list>]

Where:

<address> Is a two-part designation consisting of either an alphabetic segment register plus an offset value, or a four-digit segment address plus an offset value. The default segment is DS.

<list> Is a series of byte values or string values. <List> must be the last value on the command line.

Where:

<byte> Is a two digit hex value to be placed in or read from an address or register.

<string> Is any number of characters enclosed in either single or double quotes. If quotes appear in the string, they must be doubled.

Comments

If you specify <list>, the replacement of byte values occurs automatically.

If you specify <address> without specifying <list>, DEBUG displays the address and its contents, then repeats the address on the same line and waits for your input. Perform one of the following actions:

- Type a new value to replace the current value. If you type either an illegal hex value or more than two digits, the illegal or extra character is not echoed.
- Press the spacebar to advance to the next byte. If you space beyond an eight byte boundary, DEBUG starts a new display line with the address displayed at the beginning.
- Type a hyphen (-) to return to the previous byte. To change a byte behind the current position, typing the hyphen returns the current position to the previous byte. When you type the hyphen, a new line is started with the address and its byte value displayed.
- Press the Return key to terminate the ENTER command. You can do this at any time.

Example

Assume you type the following command:

```
ECS:100 
```

DEBUG displays:

```
0CBE:0100 EB._
```

To change EB to 41, type:

```
41
```

||||| *ENTER*

The line looks like:

```
0CBE:0100 EB.41_
```

To step through the subsequent bytes, press the spacebar:

```
0CBE:0100 EB.41 10. 00. BC._
```

To change BC to 42, type:

```
42
```

The line looks like:

```
0CBE:0100 EB.41 10. 00. BC.42_
```

To change 10 to 6F, press the hyphen key until you return to the 10 (in this example you press the hyphen key twice), and type 6F:

```
0CBE:0100 EB.41 10. 00. BC._  
0CBE:0102 00._  
0CBE:0101 10.6F_
```

Press the Return key to end the ENTER session and return to the DEBUG command level.

FILL

Purpose

To fill the addresses in <range> with the values in <list>, use the FILL command.

Format

F <range> <list>

Where:

<range> Is either <address><address> or <address>L<value>. <Value> is the number of lines the FILL command should work on. A length of 80 is assumed. If another hex value follows <range>, you cannot use the form <address>L<value> because the second hex value is interpreted as the second address.

<list> Is a series of byte values or string values. <List> must be the last value on the command line.

Where:

<byte> Is a two digit hex value to be placed in or read from an address or register.

<string> Is any number of characters enclosed in either single or double quotes. If quotes appear in the string, they must be doubled.



Comments

If `<range>` contains more bytes than the number of values in `<list>`, `<list>` is used repeatedly until all bytes in `<range>` are filled. If `<list>` contains more values than the number of bytes in `<range>`, the extra values in `<list>` are ignored. If any of the memory in `<range>` is bad or nonexistent, an error occurs in all succeeding locations.

Example

To fill the 100H bytes beginning at location 0CBE:100, type:

```
FOCBE:100 L 100 42 45 52 54 41 
```

-

DEBUG fills the memory locations 0CBE:100 through 0CBE:1FF with the bytes specified. The five values are used repeatedly until the 100H bytes are filled.

GO

Purpose

To execute the program currently in memory, use the GO command.

Format

G [=<address1> [<address2>...]]

Where:

- <address1> Is the start address. It is a two-part designation consisting of either an alphabetic segment register plus an offset value, or a four-digit segment address plus an offset value. The default segment is CS.
- <address2> Are optional breakpoint addresses. Each address is a two-part designation consisting of either an alphabetic segment register plus an offset value, or a four-digit segment address plus an offset value. The default segment is CS.

Comments

If you type the GO command without parameters, the program is executed as if it was started at CS:IP.

If you specify <=address1>, execution begins there. The equal sign is required so that DEBUG can distinguish the start address from the breakpoint addresses.

If you specify the optional addresses, DEBUG stops execution at the first address it encounters, regardless of the position of that address in the list of addresses to stop program execution or program branching. When DEBUG reaches a breakpoint, the registers, the flags, and the decoded instruction are displayed for the last instruction executed. The result is the same as if you typed the REGISTER command for the breakpoint address. If you want to set more breakpoint addresses after one is reached, you have to reenter them again.

|||| GO

You can set up to 10 breakpoints, and each breakpoint can only be set at an address containing the first byte of an 8086 opcode. If you set more than 10 breakpoints, an error message is displayed.

The user stack pointer must be valid and have six bytes available for the GO command. The GO command uses an IRET instruction to jump to the program under test. The user stack pointer is set, and the user flags and CS:IP are pushed on the stack. If the user stack is not valid or is too small, the operating system can crash. An interrupt code (0CCH) is placed at the specified breakpoint addresses.

When an instruction with the breakpoint code is encountered, all breakpoint addresses are restored to their original instructions. If execution is not halted at one of the breakpoints, the interrupt codes are not replaced with the original instructions.

Example

To execute a program and halt it at CS:7550, type:

```
GCS:7550 
```

Program terminated normally

-

DEBUG displays the registers and flags, and then the GO command terminates.

If you type the GO command again after a breakpoint is encountered, the program resumes execution at the instruction following the breakpoint.

HEX

Purpose

To perform hexadecimal arithmetic on the specified parameters, use the HEX command.

Format

H <value1> <value2>

Where;

<value1> Is a hexadecimal number with a maximum of four digits in length.

<value2> Is a hexadecimal number with a maximum of four digits in length.

Comments

DEBUG first adds the two values, then subtracts <value2> from <value1>. The sum and the difference are displayed on one line.

Example

To find the sum and difference between 19FH and 10AH, type:

```
H19F 10A 
02A9 0095
-
```



INPUT

Purpose

To input and display one byte from the port specified by <value>, use the INPUT command.

Format

I <value>

Where:

<value> Is a hexadecimal number with a maximum of four digits in length. <Value> specifies a port number.

Comments

You can specify a 16-bit address for <value>.

Example

Assume that the byte at the port is 42H. If you type the following command, DEBUG inputs the byte and displays it:

I 2F8

LOAD

Purpose

To load a file into memory, use the LOAD command.

Format

L [<address> [<drive> <record1> <record2>]]

Where:

- <address> Is a two-part designation consisting of either an alphabetic segment register plus an offset value or a four-digit segment address plus an offset value. If the segment is omitted, the default segment is used. CS is the default segment for the LOAD command.
- <drive> Is a one-digit hex value that indicates which drive a file will be loaded from or written to. Valid values are 0=A:, 1=B:, 2=C:, 3=D:.
- <record1> Is a one to three-digit hex value used to indicate the logical record number on the disk. Logical records correspond to sectors, but their numbering is different because they represent the entire disk space.
- <record2> Is a one to three-digit hex value used to indicate the the number of disk sectors to be loaded or written.

Comments

Set BX:CX to the number of bytes read. The file has to have been named either when DEBUG was started or using the NAME command. Both the DEBUG invocation and the NAME command format a file name properly in the normal format of a file control block at CS:5C.

If you type the LOAD command with no parameters, DEBUG loads the file specified with the NAME command into memory beginning at CS:100 and sets BX:CX to the number of bytes loaded.

If you type the LOAD command with <address>, loading begins at <address>.

If you type the LOAD command with all parameters, absolute disk sectors are loaded, not a file. The records are taken from <drive>. DEBUG begins loading with <record1>, and continues until the number of sectors specified in <record2> have been loaded.

||||| *LOAD*

If the file has a .EXE file extension, it is relocated to the load address specified in the program header of the .EXE file. <Address> is always ignored for .EXE files. The program header itself is stripped off the .EXE file before it is loaded into memory. Thus the size of the .EXE file on disk differs from its size in memory.

If the file has a .HEX extension and you type the LOAD command with no parameters, DEBUG loads the file beginning at the address specified in the .HEX file.

If the file has a .HEX extension and you type the LOAD command with <address>, DEBUG adds <address> to the address found in the .HEX file to determine the start address for loading the file.

Examples

Assume you type the following commands:

```
A:\>DEBUG   
-NF FILE.COM 
```

Now, to load FILE.COM, type:

```
L 
```

DEBUG loads the file and displays its prompt.

Assume you want to load only portions of a file or certain records from a disk. To do this type:

```
LOCBE:100 2 0F 6D 
```

DEBUG loads 109 (6DH) records into memory at 0CBE:100, beginning with logical record number 0FH. When DEBUG finishes loading the records, it displays its prompt.

MOVE

Purpose

To move a block of memory specified by <range> to the location beginning at <address>, use the MOVE command.

Format

M <range> <address>

Where:

- <range> Is either <address><address> or <address>L<value>. <Value> is the number of lines the MOVE command should work on. A length of 80 is assumed. If another hex value follows <range>, you cannot use the form <address>L<value> because the second hex value would be interpreted as the second address.
- <address> Is a two-part designation consisting of either an alphabetic segment register plus an offset value or a four-digit segment address plus an offset value. If the segment is omitted, the default segment is used. DS is the default segment for the MOVE command.

Comments

You can perform overlapping moves (moves where part of the block overlaps some of the current addresses) without loss of data. Addresses that could be overwritten are moved first. The sequence for moves from higher addresses to lower addresses is to move the data beginning at the block's lowest address and then to move towards the highest. The sequence for moves from lower addresses to higher addresses is to move the data beginning at the block's highest address and then to move towards the lowest.

NOTE

If the addresses in the block being moved will not have new data written to them, the data there before the move will remain. The MOVE command copies the data from one area into another, in the sequence described, and writes over the new addresses.

||||| *MOVE*

Example

Assume that you type:

MCS:100 110 CS:500

-

DEBUG first moves address CS:110 to address CS:510, then CS:10F to CS:50F, and so on until CS:100 is moved to CS:500. Use the DUMP command, with the address specified for the MOVE command, to see the results of the move.

NAME

Purpose

To set file names and format file control blocks (FCB) for the first two file names, use the NAME command.

Format

N <filename1> [<filename2>...]

Where:

- <filename1> Is the file name of the first file for which you want an FCB set up.
- <filename2> Is the file name of the second file for which you want an FCB set up.

Comments

The NAME command assigns a file name for a later LOAD or WRITE operation. Therefore, if you start DEBUG without naming any file to be debugged, you must type the following command before a file can be loaded:

```
N <filename> 
```

The NAME command assigns file name parameters to the file being debugged. In this case, NAME accepts a list of parameters that are used by the file being debugged.

These two functions overlap. Consider the following DEBUG commands:

```
- N FILE1.EXE   
- L   
- G 
```



NAME

The **NAME** command performs the following steps:

1. The **NAME** command assigns the file name **FILE1.EXE** to the file name to be used in any later **LOAD** or **WRITE** operations.
2. The **NAME** command assigns the file name **FILE1.EXE** to the first file name parameter used by any program that is later debugged.
3. The **LOAD** command loads **FILE1.EXE** into memory.
4. The **GO** command causes **FILE1.EXE** to be executed with **FILE1.EXE** as the single file name parameter (that is, **FILE1.EXE** is executed as if you typed **FILE1.EXE** from the command line).

Consider the following **DEBUG** command:

```
-N FILE1.EXE   
-L   
-N FILE2.DAT FILE3.DAT   
-G 
```

The **NAME** command sets **FILE1.EXE** as the file name for the subsequent **LOAD** operation. The **LOAD** command loads **FILE1.EXE** into memory. The next **NAME** command specifies the parameters to be used by **FILE1.EXE**. The **GO** command executes **FILE1.EXE** as if you typed the following on the command line:

```
FILE1 FILE2.DAT FILE3.DAT 
```

NOTE

If you execute the **WRITE** command at this point, **FILE1.EXE** would be saved as **FILE2.DAT**. To avoid such results, you should always execute the **NAME** command before either a **LOAD** or **WRITE** operation.

The NAME command can affect four regions of memory:

- CS:5C FCB for the first file parameter given to the NAME command.
- CS:6C FCB for the second file parameter (if one is typed) given to the NAME command.
- CS:80 Contains the number of characters typed in the NAME command (excluding the N).
- CS:81 Contains the actual stream of characters typed in the NAME command (excluding the N). This stream of characters can contain switches and delimiters that would be legal in any command typed at the MS-DOS command level.

Example

To debug PROG.COM and specify the parameters PARAM1 and PARAM2/C, type:

```
DEBUG PROG.COM 
-NPARAM1 PARAM2/C 
-G 
-
```

The GO command executes the file in memory as if you typed:

```
A:\>PROG PARAM1 PARAM2/C 
```



OUTPUT

Purpose

To send the byte specified to the output port specified by <value>, use the OUTPUT command.

Format

O <value> <byte>

Where:

<value> Is a hexadecimal number up to four digits in length that specifies a port number

<byte> Is a two-digit hex value placed in or read from an address or register

Comments

You can specify a 16-bit address for <value>.

Example

To output the byte value 4F to port 2F8, type:

O2F8 4F

PTRACE

Purpose

To execute one instruction and display the contents of all registers and flags, and the decoded instruction, use the TRACE command.

Format

P [=<address>] [<value>]

Where:

<address> Is a two-part designation consisting of either an alphabetic segment register plus an offset value or a four-digit segment address plus an offset value. If the segment is omitted, the default segment is used. CS is the default segment for the PTRACE command. If specified, the PTRACE begins at this address.

<value> Is a hexadecimal number up to four digits in length that specifies the number of steps for the PTRACE command.

Comments

The PTRACE command is identical to the TRACE command except that it automatically executes and returns from any calls or software interrupts it encounters. The TRACE command always stops after executing the call or interrupt, leaving execution control inside the called routine.

The PTRACE command uses the hardware trace mode of the 8086 or 8088 microprocessor. Therefore, you can also trace instructions stored in ROM.

||||| *PTRACE*

Examples

To display the registers, flags, and one decoded instruction, type:

P

```
AX=0E00 BX=00FF CX=0007 DX=01FF SP=039D BP=0000 SI=005C DI=0000
DS=04BA ES=04BA SS=04BA CS=04BA IP=011A NV UP DI NG NZ AC PE NC
0CBE:011A CD21 INT 21
```

If you now type:

P=011A 10

```
AX=0000 BX=0000 CX=00FE DX=0000 SP=FFFE BP=0001 SI=005C DI=0000
DS=0CA4 ES=0CA4 SS=0CB4 CS=0CBE IP=011B NV UP EI PL NZ NA PD CY
0CBE:011B 52 PUSH DX
```

```
AX=0000 BX=0000 CX=00FE DX=0000 SP=FFFE BP=0000 SI=005C DI=0000
DS=0CA4 ES=0CA4 SS=0CB4 CS=0CBE IP=011C NV UP EI PL NZ NA PD CY
0CBE:011A 54 PUSH SP
```

.
.
.

```
AX=0000 BX=0000 CX=0101 DX=0003 SP=FFF2 BP=0004 SI=005C DI=0000
DS=0CA4 ES=0CA4 SS=0CB4 CS=0CBE IP=012A NV UP EI PL NZ NA PD CY
0CBE:012A 52 PUSH DX
```

-

DEBUG executes 16 (10H) instructions, beginning at 0CBE:0110, displaying all registers and flags for each instruction as it is executed. Press <Ctrl/S> to stop the scrolling of the display. Press any other key to continue.

QUIT

Purpose

To end the DEBUG session, use the QUIT command.

Format

Q

Comments

The QUIT command ends the DEBUG session without saving the file currently being operated on.

The QUIT command returns to the MS-DOS command level.

Example

To end the debugging session, type:

Q

 REGISTER**REGISTER***Purpose*

To display the contents of one or more CPU registers, use the REGISTER command.

Format

R [<registername>]

Where:

<registername> Is the name of a CPU register. Valid registernames are AX, BX, CX, DX, CS, DS, ES, SS, BP, SP, DI, SI, IP, PC, and F.

Comments

If you do not specify a register, the REGISTER command dumps the register save area and displays the contents of all registers and flags.

If you specify a register, the 16-bit hex value of that register is displayed. Then a colon is displayed as the prompt. Type a value to change the contents of the register, or press the Return key for no change.

If you specify F as the register, DEBUG displays each flag with a two-letter alphabetic code. To alter any flag, type the opposite two-letter code.

Table 39-2 lists the flags and the two-letters codes for set and clear.

Table 39-2 Flags

Flag	Set	Clear
Overflow	OV	NV
Direction	DN (decrement)	UP (increment)
Interrupt	EI (enable)	DI (disable)
Sign	NG (negative)	PL (plus)
Zero	ZR	NZ
Auxiliary Carry	AC	NA
Parity	PE (even)	PO (odd)
Carry	CY	NC

When you type the command RF, the flags are displayed in the order shown in Table 39-2. At the end of the list of flags, DEBUG displays a hyphen. You can enter new flag values as two-letter codes in any order. You do not have to leave spaces between the flag entries. Flags for which you did not enter new values remain unchanged.

To exit from the REGISTER command, press the Return key.

If you type an invalid two-letter code, a message is displayed. DEBUG changes the flags up to the invalid code. DEBUG does not change the flags at or after the error.

At start up, the segment registers are set to the bottom of free memory. IP is set to 0100H. All flags are clear. The remaining registers are set to zero.



REGISTER

Examples

To display all registers, flags, and the decoded instruction at the current location, type:

```
R   
AX=0E00 BX=00FF CX=0007 DX=01FF SP=039D BP=0000 SI=005C DI=0000  
DS=04BA ES=04BA SS=04BA CS=04BA IP=011A NV UP DI NG NZ AC PE NC  
0CBE:011A CD21 INT 21
```

To display the flags, type:

```
RF   
NV UP DI NG NZ AC PE NC - -
```

To change any or all flags, type valid flag designations, in any order, with or without spaces:

```
NV UP DI NG NZ AC PE NC - PLEICY   
-RF  
NV UP EI PL NZ AC PE CY - -
```

To leave the flags as they now are, press the Return key.

SEARCH

Purpose

To search the range specified for the list of bytes specified, use the SEARCH command.

Format

S <range> <list>

Where:

<range> Is either <address><address> or <address>L<value>. <Value> is the number of lines the SEARCH command should work on. A length of 80 is assumed. If another hex value follows <range>, you cannot use the form <address>L<value> because the second hex value would be interpreted as the second address.

<list> Is a series of byte values or string values. <List> must be the last value on the command line.

Where:

<byte> Is a two digit hex value to be placed in or read from an address or register.

<string> Is any number of characters enclosed in either single or double quotes. If quotes appear in the string, they must be doubled.



SEARCH

Comments

<List> can contain one or more bytes, separated by a space or comma. If <list> contains more than one byte, only the first address of the byte string is returned. If <list> contains only one byte, all addresses of the byte in <range> are displayed.

Example

If you type:

SCS:100 110 41

0CBE:0104

0CBE:010D

-

TRACE

Purpose

To execute one instruction and display the contents of all registers and flags, and the decoded instruction, use the TRACE command.

Format

T [=<address>] [<value>]

Where:

- <address> Is a two-part designation consisting of either an alphabetic segment register plus an offset value or a four-digit segment address plus an offset value. If the segment is omitted, the default segment is used. CS is the default segment for the TRACE command. If specified, the TRACE begins at this address.
- <value> Is a hexadecimal number up to four digits in length that specifies the number of steps for the TRACE command.

Comments

The TRACE command uses the hardware trace mode of the 8086 or 8088 microprocessor. Therefore, you can also trace instructions stored in ROM.

||||| TRACE

Examples

To display the registers, flags, and one decoded instruction, type:

T

```
AX=0E00 BX=00FF CX=0007 DX=01FF SP=039D BP=0000 SI=005C DI=0000
DS=04BA ES=04BA SS=04BA CS=04BA IP=011A NV UP DI NG NZ AC PE NC
OCBE:011A CD21 INT 21
```

If you now type:

T=011A 10

```
AX=0000 BX=0000 CX=00FE DX=0000 SP=FFFE BP=0001 SI=005C DI=0000
DS=0CA4 ES=0CA4 SS=0CB4 CS=0CBE IP=011B NV UP EI PL NZ NA PD CY
OCBE:011B 52 PUSH DX
```

```
AX=0000 BX=0000 CX=00FE DX=0000 SP=FFFE BP=0000 SI=005C DI=0000
DS=0CA4 ES=0CA4 SS=0CB4 CS=0CBE IP=011C NV UP EI PL NZ NA PD CY
OCBE:011A 54 PUSH SP
```

.
.
.

```
AX=0000 BX=0000 CX=0101 DX=0003 SP=FFF2 BP=0004 SI=005C DI=0000
DS=0CA4 ES=0CA4 SS=0CB4 CS=0CBE IP=012A NV UP EI PL NZ NA PD CY
OCBE:012A 52 PUSH DX
```

-

DEBUG executes 16 (10H) instructions, beginning at 0CBE:0110, displaying all registers and flags for each instruction as it is executed. Press <Ctrl/S> to stop the scrolling of the display. Press any other key to continue.

UNASSEMBLE

Purpose

To unassemble bytes and display the source statements that correspond to them, with addresses and byte values, use the UNASSEMBLE command.

Format

U [<range>]

Where:

<range> Is either <address><address> or <address>L<value>. <Value> is the number of lines the UNASSEMBLE command should work on. A length of 80 is assumed.

Comments

If you type the UNASSEMBLE command without parameters, DEBUG unassembles 20H bytes at the first address after that displayed by a previous UNASSEMBLE command.

If you type the UNASSEMBLE command and specify <range>, DEBUG unassembles all bytes in <range>. If <range> is an address, DEBUG unassembles 20H bytes instead of 80H bytes.

Examples

To unassemble 16 bytes beginning at 0CBE:100, type:

```
U0CBE:0100 L16 (Return)
0CBE:0100 206472 AND [SI+72],AH
0CBE:0103 69 DB 69
0CBE:0104 7665 JBE 016B
0CBE:0106 207370 AND [BP+DI+70],DH
0CBE:0109 65 DB 65
0CBE:010A 63 DB 63
0CBE:010B 69 DB 69
0CBE:010C 66 DB 66
0CBE:010D 69 DB 69
0CBE:010E 63 DB 63
0CBE:010F 61 DB 61
```




UNASSEMBLE

To unassemble the bytes from 0CBE:0100 to 0CBE:0108, type:

```
U0CBE:0100 0108 
```

```
0CBE:0100 206472    AND  [SI+72],AH
0CBE:0103 69       DB    69
0CBE:0104 7665     JBE  016B
0CBE:0106 207370    AND  [BP+DI+70],DH
```

If the bytes in some addresses are altered, the UNASSEMBLE command alters the instruction statements. You can type the UNASSEMBLE command for the changed locations, the new instructions viewed, and the unassembled code to edit the source file.



WRITE

Purpose

To write the file being debugged to a disk file, use the WRITE command.

Format

W [<address> [<drive> <record1> <record2>]]

Where:

- <address> Is a two-part designation consisting of either an alphabetic segment register plus an offset value or a four-digit segment address plus an offset value. If the segment is omitted, the default segment is used. CS is the default segment for the WRITE command.
- <drive> Is a one-digit hex value that indicates which drive a file will be loaded from or written to. Valid values are 0=A:, 1=B:, 2=C:, 3=D:.
- <record1> Is a one to three-digit hex value used to indicate the logical record number on the disk. Logical records correspond to sectors, but their numbering is different because they represent the entire disk space.
- <record2> Is a one to three-digit hex value used to indicate the number of disk sectors to be loaded or written.



WRITE

Comments

If you type the WRITE command with no parameters, make sure you first set BX:CX to the number of bytes to be written. The file is written beginning from CS:100.

NOTE

If you want to use the WRITE command without parameters, and you have already used a GO or TRACE command, make sure you reset BX:CX.

If you type the WRITE command with an address, the file is written beginning from the address.

If you load a file and modify it, the name, length and starting address are all set correctly to save the modified file (as long as the length has not changed).

If you type the WRITE command with parameters, the write begins from the memory address specified. The WRITE command writes the file to <drive>. DEBUG writes the file beginning at the logical record number specified by <record1>. DEBUG continues to write the file until the number of sectors specified in <record2> have been written.

Examples

To write the currently debugged file to disk, type:

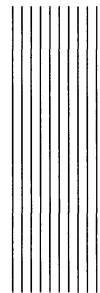
```
W 
```

To write 2BH records, beginning at address CS:100, to drive B and begin writing at logical record 37H, type:

```
WCS:0100 1 37 2B 
```

Chapter 40

Messages



This chapter lists and discusses:

- Disk and device messages
- MS-DOS operating system messages
- MS-Windows messages
- NFT messages
- SETHOST messages
- Terminal emulator messages

Many of the MS-Windows messages are displayed in dialog boxes with an OK and a Cancel option. To make the dialog box and the message disappear before you proceed, select the OK option. Some dialog boxes include a Retry option. To retry an operation, select the Retry option.

These messages can be displayed while running any MS-Windows application. The messages are listed alphabetically, followed by an explanation and action to correct the problem.

Each message has at least one word or one abbreviation after it, capitalized and enclosed in parentheses, to indicate the utility or program that generated the message. Most of these words and abbreviations are self-explanatory, except for the following abbreviations:

- (BR) Messages generated by either the BACKUP command or the RESTORE command
- (MS) Messages generated by the MS-DOS operating system
- (TE) Messages generated by the terminal emulator
- (WIN) Messages generated by MS-Windows

Disk and Device Errors

If a disk or device error occurs at any time during a command or program, the MS-DOS operating system displays the following message:

```
(type) (action) drive x
Abort, Retry, Ignore: _
```

Where:

type	Is one of the following:
	Bad call format error
	Bad command error
	Bad unit error
	Data error
	FCB unavailable
	General failure
	Invalid disk change
	Lock violation
	Non-DOS disk error
	No paper error
	Not ready error
	Read fault error
	Sector not found error
	Seek error
	Sharing violation
	Write fault error
	Write protect error
action	Is either reading or writing.
drive	Is the drive in which the error occurred.

The MS-DOS operating system waits for you to respond in one of the following ways:

- A Aborts the program requesting the disk read or write.
- R Retries the operation. Use this response after you correct the error.
- I Ignores the bad sector as if the error did not occur.

Messages

Allocation error in file, size adjusted (MS)

Cause: The size of the file indicated in the directory is inconsistent with the amount of data actually allocated to the file.

Action: To make sure the data in the file is still valid, run the CHKDSK program and specify the /F qualifier. The CHKDSK command will try to correct the error. You may need to restore the back-up copy of this file.

Allocation error, size adjusted (MS)

Cause: An invalid cluster number was found in the file allocation table (FAT). The file was truncated at the end of the last valid cluster.

Action: To make sure the data in the file is still valid, run the CHKDSK program and specify the /F qualifier. The CHKDSK command will try to correct the error. You may need to restore the back-up copy of this file.

Allocation quantity too large. (NFT)

Cause: The disk on the remote system is too full to process your request.

Action: Read the documentation for the remote system or contact the system administrator for the remote system. You may have to specify a smaller quantity.

APPEND/ASSIGN conflict (APPEND) (ASSIGN)

Cause: The ASSIGN command was used, followed by the APPEND command.

Action: Both ASSIGN and APPEND are terminated and stay resident programs. The APPEND command must be used before the ASSIGN command if they are used together. Restart the workstation.



Application still active (WIN)

Cause: You tried to end the MS-Windows session while a standard application is still running.

Action: Close any standard applications that are running. For most applications, this means using the application's QUIT or EXIT command.

Bad call format reading/writing drive 'drivename' (MS)

Cause: The MS-DOS operating system found a request header of incorrect length for the specified device.

Action: To stop the command, press the A key. Review the source code of the program that produced the message.

Bad disk

Press any key (MS)

Cause: When you started your workstation, a hardware problem occurred which prevented the disk from being read.

Action: Turn off the workstation and restart it again. If this message is displayed again get another system diskette.

Bad file (FC)

Cause: One of the specified files is defective.

Action: Restore the back-up copy of the file.

Bad or missing 'filename' (MS)

Cause: The CONFIG.SYS file contains a reference to an invalid device.

Action: Make sure the DEVICE command is correct in the CONFIG.SYS file.



Bad command error reading/writing drive 'drivename' (MS)

Cause: The MS-DOS operating system found an invalid command in the command code field of the request header for the specified device.

Action: To stop the command, press the A key. Review the source code of the program that produced the message.

Bad command or file name (MS)

Cause: The MS-DOS operating system cannot find the specified command or file name.

Action: Make sure you typed the command correctly. Then, make sure you typed the file name correctly. Finally, make sure the file exists on the disk using the DIR command.

This page intentionally left blank.



Bad or missing Command Interpreter (MS)

Cause: The MS-DOS operating system cannot find the COMMAND.COM file.

Action: Make sure the COMMAND.COM file is in your root directory. If it is in your root directory, it may be invalid. Either restart the system or copy the COMMAND.COM file from your back-up diskette to the disk you are currently using.

Bad unit error reading/writing drive 'drivename' (MS)

Cause: The MS-DOS operating system found an invalid subunit code in the request header for the specified device.

Action: To stop the command, press the A key. Review the source code of the program that produced the message.

Because bad record size (NFT)

Cause: The record size is invalid or illegal for the specified operation.

Action: Read the documentation for the remote system and contact the remote system's system administrator.

Because cannot assign address – possibly node name is undefined (NFT)

Cause: The remote node name does not correspond to any node name defined at the local node.

Action: Make sure the remote node name is defined.

Because cannot open file (NFT)

Cause: An error occurred on a file open operation.

Action: Specify another file name. Make sure you have enough disk space to open a file. Read the documentation for the remote system and contact the remote system's system administrator.



Because cannot position to end of file (NFT)

Cause: NFT cannot append the specified input file to the end of the specified output file.

Action: Make sure the input file is open. Make sure the two files have the same file format. Read the documentation for the remote system and contact the remote system's system administrator.

Because device is write locked (NFT)

Cause: The device is write locked. The specified output file cannot be created.

Action: Change the protection for the device or write to another device. Read the documentation for the remote system and contact the remote system's system administrator.

Because directory full (NFT)

Cause: You tried to copy a file to a remote node and the remote directory is already full.

Action: Try copying the file to another directory. Read the documentation for the remote system and contact the remote system's system administrator.

Because directory not found (NFT)

Cause: You specified a directory that does not exist on the node/device.

Action: Specify another directory. Read the documentation for the remote system and contact the remote system's system administrator.

Because disk quota exceeded (NFT)

Cause: You tried to perform a remote file operation and there is no room on the remote disk.

Action: Try using another disk. Read the documentation for the remote system and contact the remote system's system administrator.



Because error in directory name (NFT)

Cause: The specified directory does not conform to the format of the target system.

Action: Specify another directory, using the destination system's format. Read the documentation for the remote system and contact the remote system's system administrator.

Because error in file name (NFT)

Cause: The specified file name does not conform to the format of the target system.

Action: Specify another file name, using the destination system's format. Read the documentation for the remote system and contact the remote system's system administrator.

Because error in record attribute (NFT)

Cause: You specified remote file record attributes that are invalid.

Action: Specify only valid remote file record attributes.

Because error in record format (NFT)

Cause: You specified remote file record formats that are invalid.

Action: Specify only valid remote file record formats.

Because file locked by other user (NFT)

Cause: Another user currently has the specified file locked or open for writing. This message is also displayed in a full directory listing.

Action: Wait until the other user has closed the file. Read the documentation for the remote system and contact the remote system's system administrator.



Because file not found (NFT)

Cause: The specified file or files do not exist.

Action: Specify a valid local file. For remote files, read the documentation for the remote system and contact the remote system's system administrator.

Because file read error (NFT)

Cause: An unrecoverable error occurred while reading on the device.

Action: Read the documentation for the remote system and contact the remote system's system administrator.

Because file write error (NFT)

Cause: An unrecoverable error occurred while writing on the device.

Action: Read the documentation for the remote system and contact the remote system's system administrator.

Because illegal record attributes (NFT)

Cause: The file's record attributes are invalid, or unsupported, by NFT.

Action: Read the documentation for the remote system and contact the remote system's system administrator.

Because incorrect user access information (NFT)

Cause: The network rejected an attempted connection because the specified access control information did not match a valid account on the remote node.

Action: Specify valid access control information.

Because invalid record format (NFT)

Cause: The file's record format is invalid, or unsupported, by NFT.

Action: Read the documentation for the remote system and contact the remote system's system administrator.



Because invalid wildcard operation (NFT)

Cause: The remote system rejected the wildcard specification as inappropriate for the operation.

Action: Specify a valid wildcard. Read the documentation for the remote system and contact the remote system's system administrator.

Because privilege violation (NFT)

Cause: You attempted an operation for which you have no privileges.

Action: Read the documentation for the remote system. You may need to change the access control list or login command file.

bf Error (DEBUG)

Cause: You tried to alter a flag and specified an invalid flag specification.

Action: Enter a valid flag specification and retry the command.

bp Error (DEBUG)

Cause: You tried to set more than 10 breakpoints as parameters for the GO command.

Action: Specify 10 parameters or less for the GO command.

br Error (DEBUG)

Cause: You specified an invalid register name for the REGISTER command.

Action: Enter a valid register and retry the command.

**Can't share 'pathname'
Drive is redirected (PERMIT)**

Cause: The path specified was redirected over the network and cannot be shared with the PERMIT command.

Action: Specify the actual path.



Cannot Access Comm Port 'portnumber' [- Exit Set-Up?] (TE)

Cause: The indicated serial communications port is not installed or cannot be initialized.

Action: Make sure the port is properly connected to the modem or communications line. If you are using the VT240 terminal emulator, you have to define the emulator when you enter it.

If this message occurs while trying to exit Set-Up, you have the option of remaining in Set-Up or exiting Set-Up, in which case no connection is made.

Cannot Access Network [- Exit Set-Up?] (TE)

Cause: The requested Network Terminal Service cannot be initialized.

Action: Make sure the hardware is properly connected and the network is operational.

Make sure the requested Network Terminal Service is currently available from the host.

On rare occasions this message may indicate that some limited resource of the network or host (such as maximum number of simultaneous sessions) has been exceeded.

If this message occurs while trying to exit Set-Up, you have the option of remaining in Set-Up or exiting Set-Up, in which case no connection is made.

Cannot access printer port (TE)

Cause: The VT220 terminal emulator cannot open the printer port LPT1. The printer may be unable to allocate the necessary queue or the hardware may not be present.

Action: Make sure there is a printer port LPT1. You may have to close some of your applications to use the printer.

**Cannot change directory to 'directoryname' (WIN)**

Cause: You specified a file name instead of a directory name using the Change Directory command.

Action: Select or type a directory name, then retry the Change Directory command.

Cannot Chdir to 'filename'**Tree past this point not processed (MS)**

Cause: The CHKDSK command is unable to check the specified directory. All subdirectories and files under this directory cannot be verified. Your directory structure could be corrupt. You could also have more subdirectories than are allowed by the MS-DOS operating system.

Action: To save the files that you can, run the CHKDSK program and specify the /F qualifier. The CHKDSK command will try to correct the error. You may need to restore lost files from your back-up diskette.

Cannot CHKDSK a Network drive (MS)

Cause: You tried to check drives that are redirected over the network.

Action: Make sure the drive is not redirected before you issue the CHKDSK command.

Cannot Chdir to root -**Processing cannot continue (MS)**

Cause: The CHKDSK command cannot to return to the root directory. The CHKDSK command cannot continue checking the remaining subdirectories to the root. Your disk structure could be corrupt.

Action: Remember the path that would not allow you to reach the root. Try restarting the MS-DOS operating system. If this error persists, you cannot use the disk.

Cannot close file 'filename' (GRAFTABL)

Cause: The file 'filename' cannot be closed. Either the file handle could not be closed or the file handle is invalid.

Action: Retry the GRAFTABL command.

Cannot connect to self (NET)

Cause: You tried to connect to a remote resource but incorrectly specified your network name as the computer name of the server.

Action: Specify a valid computer name for a server.

Cannot copy file to itself (WIN)

Cause: You tried to copy a file to the same file name either on the same disk or in the same directory. This is not allowed because it overwrites the file.

Action: Copy the file again, specifying a different destination file name.

Cannot copy more than one file to a single file (WIN)

Cause: You selected more than one file name and specified a single file as the destination.

Action: Select the file you want to copy and start again. To copy multiple files, specify a directory to copy them into.

Cannot create 'filename' (WIN)

Cause: Either of two things occurred:

- You tried to save your work to a read-only file.
- You tried to create a file on a network drive that is read-only.

Action: Specify another file name or drive name when you save your work.

Cannot create a temporary file on destination diskette (SELECT)

Cause: The destination diskette's directory is full.

Action: Delete some files from the diskette, or use another diskette.

Cannot create directory 'directoryname' (WIN)

Cause: Any of the following things occurred:

- You tried to create a directory using a name that already exists in the current directory.
- You tried to create a directory on a disk that is write-protected.
- You tried to create a directory on a disk that is read-only.

Action: Try one of the following:

- Retry the command with a unique directory name.
- If the disk is read-only, use the ATTRIB command to change its attributes.
- If you tried to create the directory on a diskette that is write-protected, remove the write-protection tab. Retry the command.

Cannot create new output file (SELECT)

Cause: The destination diskette's directory is full.

Action: Delete some files from the diskette, or use another diskette.

Cannot delete 'filename' (WIN)

Cause: Either of two things occurred:

- You tried to delete a file on a write-protected diskette.
- You tried to delete a read-only file.

Action: Try one of the following:

- Remove the write-protection tab and retry the command.
- Use the ATTRIB command to change the file's attributes so that you can delete it.



Cannot delete file: 'filename' (NFT)

Cause: You tried to delete a directory file or you tried to delete a file that is read-only.

Action: To delete a directory file, delete all files in the directory and change the protection of the directory file. Now you can delete the directory file. To delete a read-only file, change the read-only attribute. Now you can delete the file.

Cannot delete the current directory (WIN)

Cause: You tried to delete the current directory. This is not allowed, even if the directory is empty.

Action: Move to the directory above your current directory and retry the RMDIR command.

Cannot disconnect from current drive (NET)

Cause: You cannot disconnect your current drive.

Action: Change the default drive and retry the NET USE command.

Cannot DISKCOPY a network resource (DISKCOPY)

Cause: You tried to use the DISKCOPY command on a network resource.

Action: Do not try to execute the DISKCOPY command on a remote network resource.

Cannot DISKCOPY an ASSIGNED or SUBSTed drive (DISKCOPY)

Cause: You tried to use the DISKCOPY command with a drive for which you used the ASSIGN or SUBST command.

Action: Do not try to execute the DISKCOPY command on a drive for which you used the ASSIGN or SUBST command.

Cannot do binary reads from a device (MS)

Cause: You tried to execute the COPY command with the /B qualifier when copying from a device.

Action: Try one of the following:

- Remove the /B qualifier and retry the COPY command.
- Specify an ASCII copy using the /A qualifier. Retry the COPY command.

Cannot edit .BAK file – rename file (MS)

Cause: You tried to edit a back-up copy made by EDLIN.

Action: Try one of the following:

- Rename the .BAK file and give it another file extension.
- Copy the .BAK file and give it a different file extension.

Cannot Find 'filename' (TE)

Cause: You selected an action requiring a file, and the MS-DOS Executive cannot find the file in the directory or on the disk.

Action: Make sure you typed the file name correctly. You may need to change directories to locate the file, or you may need to type a path name before the file name. If the file is not on the diskette, insert the diskette containing the file into the drive. Select the command and try again.

Cannot find 'filename' (WIN)

Cause: The MS-DOS Executive cannot find the file in the directory or on the disk.

Action: Make sure you typed the file name correctly. You may need to change directories to locate the file, or you may need to type a path name before the file name. If the file is not on the diskette, insert the diskette containing the file in the drive. Select the command and try again.

If the file contains special characters, try the operation through the MS-DOS operating system.

Cannot find system file on current drive (WIN)

Cause: You ran Make System Disk from a drive that does not contain the system files.

Action: Change your current drive to a drive containing your system files.

Cannot FORMAT a Network drive (MS)

Cause: You tried to format a drive that is redirected over the network.

Action: Do not try to format a drive that has been redirected over the network.

Cannot format an Assigned drive (MS)

Cause: You tried to format a drive whose input/output (I/O) is sent to another drive.

Action: To clear all drive assignments, type:

A>ASSIGN

Cannot format diskette (WIN)

Cause: The diskette is defective or a read-only diskette.

Action: Try one of the following:

- Replace the diskette if it is defective and retry the command.
- Remove the write-protect tab and retry the command.

Cannot format drive. (FDISK)

Cause: You set the drive type improperly.

Action: Make sure you specify the correct drive type for your workstation hard disk.

Cannot JOIN a network drive. (MS)

Cause: You tried to join a network drive.

Action: Specify a drive other than a network drive.

Cannot LABEL a SUBSTed or ASSIGNed drive (LABEL)

Cause: You tried to label a drive that was assigned using the ASSIGN command or substituted using the SUBST command.

Action: Use the LABEL command only with valid drives.

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Cannot label a network drive (LABEL)

Cause: You tried to label a drive that is shared on a network.

Action: Do not try to label a network drive.

Cannot Open 'filename' (TE)

Cause: The MS-DOS operating system cannot find the file you specified, or you tried to open a file that is in a read-only access area.

Action: Make sure the file exists. If the file exists, make sure the path is a valid path. Make sure you typed the file name correctly.

Cannot open back-up id file on back-up destination disk (BR)

Cause: The BACKUP or RESTORE command cannot open the BACKUPID.@@@ file on the destination disk.

Action: Make sure you typed the information on the command line correctly. Then make sure the BACKUPID.@@@ file is where you specified it to be.

Cannot open file 'filename' (MS) (GRAFTABL) (SORT)

Cause: The MS-DOS operating system cannot find the file you specified.

Action: Make sure you typed the file name correctly. Then, make sure the file exists. If the file exists, make sure the path is valid. Finally, retry the command.

Cannot Open Printer (TE)

Cause: MS-Windows cannot allocate the memory needed for a print operation.

Action: Reduce the number of processes you are running or close some of your applications in MS-Windows.

Cannot print (WIN)

Cause: You did not properly install your printer (this includes having proper settings in the WIN.INI file).

Action: Check the printer connections and Control Panel printer settings. Set your printer up properly and start again.

Cannot put MS-DOS system on the diskette (WIN)

Cause: The diskette cannot be formatted with the system files.

Action: Put a blank, formatted diskette in the drive and retry the SYS command.

The source diskette must contain the following:

- COMMAND.COM in the root directory
- IO.SYS
- MSDOS.SYS

The destination diskette must meet these requirements:

- The first two directories are empty.
- The first n clusters are free, where n is enough room for IO.SYS and MSDOS.SYS.
- There is enough room on the disk for IO.SYS, MSDOS.SYS, and COMMAND.COM.

Or, the destination diskette must meet these requirements:

- The first two directory entries are IO.SYS and MSDOS.SYS.
- The first n clusters are allocated to these files, where n is enough room for IO.SYS and MSDOS.SYS.
- There is enough room on the disk for IO.SYS, MSDOS.SYS, and COMMAND.COM after deleting the original files.

Cannot Read 'filename' (TE)

Cause: An error occurred while reading the specified file.

Action: Try again.

Cannot read from device 'devicename' (WIN)

Cause: Either of two things occurred:

- MS-Windows could not read from the specified device.
- The specified device was not available for input.

Action: Make sure the device is properly set up (and, if appropriate, turned on). Select Retry to try the operation again, or Cancel to end the operation.

Cannot read from drive 'drivename' (WIN)

Cause: Any of the following things occurred:

- There was no disk in the specified drive.
- The disk drive door was open or the disk was not inserted properly.
- MS-Windows could not read the disk in the drive you specified.
- The disk was defective, damaged, or not formatted.
- There was a network error or disconnect from the device.

Action: Select Retry to try the operation again. If a floppy drive is specified, make sure the diskette is properly inserted. If you continue to receive this message, select the Cancel option.

Cannot read graphic font file 'filename' (GRAFTABL)

Cause: GRAFTABL cannot read from the file you specified on the command line. The file could be closed to reading.

Action: Retry the GRAFTABL command. If the message is displayed again, restore the font file from your back-up diskette.

Cannot recover . entry, processing continued (MS)

Cause: The . entry (current directory) is corrupt.

Action: Restore the files and directory structure from your back-up diskette.



Cannot recover .. entry (MS)

Cause: The directory above your current directory is defective. The disk area is probably corrupt.

Action: Use your back-up diskette to restore the files and the directory structure.

Cannot recover a Network drive (MS)

Cause: You tried to recover files on a drive that is redirected over the network.

Action: Do not try to recover file in redirected drives.

Cannot redirect a network printer (MODE)

Cause: You tried to redirect a printer that is a network device.

Action: To delete the connection, type:

```
A>NET USE dev /D 
```

Now, retry the redirection.

Cannot rename 'filename' (WIN)

Cause: One of the following occurred:

- The existing file is not in the current directory or on the disk.
- You did not specify a valid destination file name.

Action: Try one of the following:

- Make sure the file you want to copy exists and that you have named it correctly, then retry the command. You cannot rename a directory.
- Retry the command, specifying a valid MS-DOS destination file name.



Cannot run 'filename' (WIN)

Cause: An error occurred while you were running a program.

Action: Retry the Run command. If the command still does not work, make sure you are trying to run the correct file. Make sure the file is a program or invokes a program through the extension settings in the WIN.INI file.

Cannot run with other applications (WIN)

Cause: The program you selected is a special application that loads and stays resident and has the Modifies Memory option set in its .PIF file.

Action: Close all applications except the MS-DOS Executive before you can start this program.

Cannot set volume name (WIN)

Cause: Any of the following things occurred:

- The diskette is write protected.
- The diskette is full.
- The drive is a network device.

Action: Try one of the following:

- If you are trying to set the volume name for a diskette, remove the write-protect tab. Retry the command.
- Check the directory to see if any files can be removed, then try again.

Cannot share a SUBSTed drive (SUBST)

Cause: You specified a drive letter that is directed to another drive with the SUBST command.

Action: Specify the actual path.



Cannot share a SUBSTed drive (PERMIT)

Cause: You specified a drive letter that is directed to another drive with the SUBST command.

Action: Specify the actual path.

Cannot startup from drive n (FDISK)

Cause: You entered the Mark Start-up Partition Menu when a drive other than drive 1 was selected.

Action: Make drive 1 the start-up partition.

Cannot SUBST a network drive. (MS)

Cause: You tried to substitute a path name for a network drive.

Action: Specify a drive other than a network drive.

Cannot use PRINT – Use COPY (PRINT)

Cause: You tried to load a second print spooler after one was already loaded.

Action: Use the COPY command to print the file.

Cannot Write 'filename' (TE)

Cause: An error occurred while writing the specified file or the device is full.

Action: Try again. Make sure there is enough room on the device.



Cannot write to device 'devicename' (WIN)

Cause: Any of the following things occurred:

- MS-Windows cannot write to the specified device.
- The specified device is not available for output. Be sure the device is properly set up (and, if appropriate, turned on).
- There was a network error or disconnect from the device.

Action: Select Retry to try the operation again, or Cancel to end the operation.

Cannot write to drive 'drivename' (WIN)

Cause: Any of the following things occurred:

- There is no disk in the specified drive.
- The floppy drive door is open, or the diskette is improperly inserted.
- MS-Windows cannot write to the diskette in the drive you specified.
- The diskette is defective, damaged, or not formatted.
- There was a network error or disconnect from the device.

Action: Select Retry to try the operation again. If a floppy drive is specified, be sure the diskette is properly inserted. If you continue to receive the message, select Cancel.

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**Change Filename to 'filename' (TE)**

Cause: You tried to redirect the printer output to a file that does not have an extension of .PRN. MS-Windows requires this extension.

Action: To accept the indicated file name, click on the Yes button or press the Return key. To cancel the print request, click on the No button or press the Escape key.

Chdir .. failed, trying alternate method (MS)

Cause: The CHKDSK command cannot return to the directory above your current directory. It will try to return to that directory by starting over at the root and traveling down. The disk area is probably corrupt.

Action: Use your back-up diskette to restore the files and the directory structure.

COM1 and COM2 is not available (WIN)

Cause: Either of two things occurred:

- The application that you select requires access, but cannot access, the serial communications port 1 (COM1) or serial communications port 2 (COM2).
- You do not have a serial communications card installed as COM1 or COM2.

Action: To run the program you selected, you must close any other application that accesses the COM1 or COM2 port. If you do not have a serial port, you cannot run the selected program.

COM1 is not available (WIN)

Cause: Either of two things occurred:

- The application you have select requires access, but cannot access, the serial communications port 1 (COM1).
- You do not have a serial communications card installed as COM1.

Action: To run the program you selected, you must close any other application that accesses the COM1 port. If you do not have a serial port, you cannot run the selected program.



COM2 is not available (WIN)

Cause: Either of two things occurred:

- The application that you select requires access, but cannot access, the serial communications port 2 (COM2).
- You do not have a serial communications card installed as COM2.

Action: To run the program you selected, you must close any other application that accesses the COM2 port. If you do not have a serial port, you cannot run the selected program.

Comm Port (n) Is In Use [- Exit Set-Up?] (TE)

Cause: The indicated serial communications port is in use by some other application.

Action: Select another port or terminate the application currently using the port.

If this message occurs while trying to exit Set-Up, you have the option of remaining in Set-Up or exiting Set-Up, in which case no connection is made to the indicated port.

Comm Port 'number' unavailable (TE)

Cause: No communications port exists.

Action: Do not try to use this port for communications.

Command does not exist (NET)

Cause: You typed a command that is not defined.

Action: Use the NET HELP command to display a list of valid commands.

Command operands incorrect (NET)

Cause: You typed a network command and included either too many or too few operands.

Action: Use the NET HELP command to check the command format. Retry the command.

Command parameters incorrect (NET)

Cause: You incorrectly typed a parameter for a command.

Action: Use the NET HELP command to check the command format.
Retry the command.

Connect failed, Access control rejected. (SETHOST)

Cause: The remote host rejected the access control information supplied when you logged in.

Action: Make sure your user name and password are valid. Retry the log in to the remote system.

Connect failed, Connection rejected by object. (SETHOST)

Cause: The remote host rejected your attempt to connect to the system.

Action: Contact your system administrator.

Connect failed, Insufficient network resources. (SETHOST)

Cause: There is a problem with the network. This error usually occurs when the maximum number of links is exceeded.

Action: Increase the number of maximum links for DECnet-DOS using the NCP DEFINE EXECUTOR command. Restart the system.

Connect failed, Invalid node name format. (SETHOST)

Cause: You supplied an invalid node name.

Action: Supply a valid node name of 1 to 6 alphanumeric characters (at least 1 alphabetic character) and retry the connect operation.

Connect failed, Invalid object name format. (SETHOST)

Cause: You used an invalid object name format.

Action: Contact your system administrator.



Connect failed, Local node shutting down. (SETHOST)

Cause: Your local system is ending network activity.

Action: Retry your operation later when the your local system resumes network activity.

Connect failed, No response from object. (SETHOST)

Cause: There is a problem with the network.

Action: Contact your system administrator.

Connect failed, Node unreachable. (SETHOST)

Cause: The remote you are trying to reach is not available for network activity.

Action: Make sure that DECnet is installed and that the DECnet circuit is running. To do this, use the NCP SHOW CIRCUIT STATUS command. Try to log in later when the system is operational.

Connect failed, Object too busy. (SETHOST)

Cause: There was a problem with the network.

Action: Contact your system administrator.

Connect failed, Remote node shutting down. (SETHOST)

Cause: The remote node is ending network activity.

Action: Wait until the remote node is running again before you try to log in to it.

Connect failed, Unrecognized node name. (SETHOST)

Cause: The system did not accept the node name supplied, or the node name was not defined in your DECnet NCP database.

Action: Supply a valid node name of 1 to 6 alphanumeric characters (at least 1 alphabetic character) and retry the connect operation. If the name is not defined in the database, use the NCP SET command to define the node you want to use.



Connect failed, Unrecognized object. (SETHOST)

Cause: There is a problem with the network.

Action: Contact your system administrator.

Connection failed to 'alias' (PERMIT)

Cause: You issued another NET USE command to 'alias' that would be a second connection, which the PERMIT command does not allow.

Action: Do not try to connect to an alias that is PERMITTED more than once.

Connection failed to 'alias' – session closed (PERMIT)

Cause: A client system specified an incorrect alias or password in the NET USE command while trying to connect to your system.

Action: The session is closed and the PERMIT command waits for a successful connection. You must inform the person issuing the NET USE command that it was invalid.

Content of destination lost before copy (MS)

Cause: A COPY command source file was overwritten prior to completion of the copy.

Action: Retry the COPY command.

Convert lost chains to files (Y/N)? (MS)

Cause: The CHKDSK command found lost blocks while performing its operations.

Action: To recover the lost blocks, create a directory entry, and create a file named FILEnnnn.CHK, press the Y key.

To free the lost blocks for reallocation, press the N key.

Could not create copy of the file (SELECT)

Cause: A write error occurred before the entire file was copied. The destination disk is probably full.

Action: Delete some files from the disk, and retry the SELECT command.

Could not read all of the existing file (SELECT)

Cause: A read error occurred before the end of file was reached. The existing CONFIG.SYS or AUTOEXEC.BAT file is bad.

Action: Retry the SELECT command. If this message is displayed again, restore the file from your back-up diskette.

Could not restore Session 'number' from file SETHOST.n in the DECnet session. (SETHOST)

Cause: SETHOST cannot access the DECnet directory to restore your session.

Action: Make sure the DECnet directory was installed correctly. Try to the restore session again.

Could not save Session 'number' to file SETHOST.n in DECnet directory. (SETHOST)

Cause: SETHOST cannot access the DECnet directory to save your session, or the disk is full.

Action: Make sure the DECnet directory was installed correctly. If the disk is full, delete some unnecessary files. Try to save the session again.

Could not write index file SETHOST.n. (SETHOST)

Cause: SETHOST could not access the directory to create an index file, or the disk is full.

Action: Make sure the DECnet directory was installed correctly. If the disk is full, delete some unnecessary files. Try to create an index file again.



Country code must be three characters long (SELECT)

Cause: You entered a country code that is either too long or too short.

Action: Make sure you enter a three-character country code, and retry the SELECT command.

Country code must be three digits (SELECT)

Cause: You entered a country code that contains a character other than a digit.

Action: Make sure you enter the country code correctly, and retry the SELECT command.

Currently no TIME SERVER available (NET TIME)

Cause: You used the NET TIME command and specified no node name. There is no server available from which to get the time.

Action: Retry the command and specify a known node name.

Data error reading/writing drive 'drivename' (MS)

Cause: The MS-DOS operating system could not read from, or write to, the disk. You cannot use this disk anymore.

Action: To retry the command, press the R key.

If the problem persists and you are performing a back-up, restore, or verify operation, press the I key to ignore the problem and continue the operation. There may be a corrupt file.

If you are not performing a back-up, restore, or verify operation and the problem persists, press the A key to stop the command. Copy all your files to a new diskette, or back up and reformat your hard disk.

Datalink initialization failure – Hardware failed to initialize.

Cause: A hardware malfunction prevented the network from starting or initializing.

Action: Your system administrator should contact an authorized service representative.



Datalink initialization failure – of Unknown Datalink Layer error.

Cause: A malfunction in the datalink layer prevented the network from starting.

Action: Your system administrator should contact an authorized service representative.

Datalink initialization failure – No memory available.

Cause: There is insufficient memory available for starting the network.

Action: Restart the system. If the error recurs, ask your system administrator to contact an authorized service representative.

Device is not redirected (NET)

Cause: You specified a printer to which you are not connected.

Action: Connect to the printer using the NET USE command.

df Error (DEBUG)

Cause: You typed two values for one flag.

Action: Retry the RF command and specify only one value per flag.

Directory is joined (MS)

Cause: You tried to execute the CHKDSK command on directories that are joined.

Action: Run the JOIN command with the /D qualifier to deassign joined directories.

Directory is not empty (WIN)

Cause: The directory still contains files.

Action: Delete the files from the directory, or move them to a different location and start again.

**Directory is totally empty, no . or .. (MS)**

Cause: The specified directory did not contain references either to your current directory or to the directory above your current directory.

Action: Delete the specified directory and recreate it.

Directory not empty (MS)

Cause: You tried to join a directory that was not empty.

Action: Back up or delete all files in the directory and retry the JOIN command.

'Directoryname' has no files in it (WIN)

Cause: You tried to copy files from an empty directory.

Action: Make sure you are using the correct directory name.

Disk error reading/writing drive 'drivename' (MS)

Cause: Any of the following occurred:

- The data area of a file is defective.
- Your diskette is bad.

Action: Get a new diskette.

Disk error reading/writing FAT 'fatnumber' (MS)

Cause: One of your file allocation tables has a defective sector. The MS-DOS operating system automatically uses the other file allocation table.

Action: Copy all your files to another disk.

Run the CHKDSK program and use the /F qualifier. The CHKDSK command will try to correct the error.

This page intentionally left blank.

Disk full—write not completed (MS)

Cause: The EDLIN program stopped the E command and returned to the MS-DOS operating system. Part of the file may have been written to disk and saved.

Action: Delete the saved portion and restart the editing session. The file is not available after this error.

Disk full. Edits lost (MS)

Cause: The EDLIN command cannot save your file due to lack of disk space.

Action: Delete some files to increase the available disk space.

Disk is full (WIN)

Cause: You tried to save a file, or carry out an action that requires creating a new file, and the disk is full.

This message is also displayed at system start-up time if the MS-DOS operating system cannot open a file.

Action: Insert another disk, or delete any unwanted files and directories from the disk, and try again.



Disk is missing necessary files (SETUP)

Cause: The \WIN\DRV directory has been corrupted.

Action: Reinstall the system following the instructions in the *VAXmate System Administrator's Guide* or restore the contents of the directory from a previous backup.

Disk is not properly initialized (FORMAT)

Cause: You tried to format the hard disk without first initializing it.

Action: Run the FDISK program and initialize the disk.

Disk type unknown (FDISK)

Cause: Any of the following occurred:

- The drive type is unknown.
- The disk was not initialized on a workstation.
- The boot block has been destroyed.

Action: Set the drive type. Then initialize the disk if you have not done so.

Disk unsuitable for system drive (MS)

Cause: The FORMAT program detected a bad track on the disk where system files should reside.

Action: Use another disk for the system disk. You can use your original disk to store files, but do not use it as a system disk.

Diskette controller error (FORMAT)

Cause: A problem occurred with the diskette controller.

Action: Make sure all cables are connected properly and reinitialize the diskette. If this message is displayed again, call Field Service.



**Diskette is write protected
Remove write protect tab and press any key to continue
Or type <CTRL/C> to abort FORMAT (FORMAT)**

Cause: You tried to format a write-protected diskette.

Action: Remove the write-protect tab and retry the FORMAT command.

**Diskette or hardware has an unrecoverable error
This diskette cannot be formatted (FORMAT)**

Cause: Your diskette is bad.

Action: Get a new diskette.

Divide overflow (MS)

Cause: The divide overflow flag was set. This occurred when a program tried to divide by zero.

Action: Determine which program was running. If the program is one of ours, call Field Service. If the program is yours, check you source code for a bug.

Do You Wish to Reconnect to 'servicename' (TE)

Cause: The prior Network Terminal Service session timed out.

Action: To reestablish the prior terminal service, click on Ok (or press the Return key). You can now log in to the host.

Drive already in use (NET)

Cause: You specified a drive letter in a NET USE command that was already used.

Action: Check the list of drives using the NET USE command.

Drive cannot be formatted (FORMAT)

Cause: The drive you specified cannot be formatted. It could be a memory drive or a network drive.

Action: Retry the FORMAT command and specify a valid drive.



Messages

Drive name must be a letter followed by a colon (SELECT)

Cause: The fourth parameter was not a letter followed by a colon.

Action: Type a valid drive specification. For example:

```
A> SELECT 001 MCS FR C: 
```

Drive not initialized (FDISK)

Cause: Either of two things occurred:

- The drive type is not set properly.
- The drive is not initialized.

Action: Set the drive type. If this message is displayed again, initialize the drive.

Duplicate file name or file not found (MS)

Cause: Either of two things occurred:

- You try to rename a file to a file name that already exists.
- You specify a file name that cannot be found.

Action: Use the DIR command to display the files in the current directory. Retry the REN command and specify valid file names.

Entry error (MS)

Cause: The last command you typed contained a format error.

Action: Retype the command using the correct format.

Entry has a bad attribute (or link or size) (MS)

Cause: The specified subdirectory has a bad attribute, link, or size. The message may be preceded by one or two periods to indicate which subdirectory is invalid.

Action: Run the CHKDSK program and specify the /F qualifier. The CHKDSK command will try to correct the error.

Error closing file: 'nodename::filename'

Because ... (NFT)

Cause: NFT cannot close the file you specified.

Action: Go to the secondary message for a specific explanation.

Error formatting target disk

Disk copy failed (DISKCOPY)

Cause: An error occurred when the DISKCOPY command tried to format the target diskette.

Action: Use another target diskette and retry the DISKCOPY command.

Error in .EXE file (running under MS-DOS)

Cause: The .EXE file you wanted the MS-DOS operating system to load has an invalid internal format.

Action: Get another copy of the .EXE file from your back-up diskette.

Error in .EXE file (running under MS-Windows)

Cause: You tried to run an application program from COMMAND.COM that has its "directly modifies memory" switch set. You cannot run this application program from MS-Windows if any other application programs are running. (COMMAND.COM is an application program in this instance.)

Action: Close all application programs except for the MS-DOS Executive. Rerun the application program.

Error in allocation amount (NFT)

Cause: You used the /ALLOCATION qualifier without a value.

Action: Retry the command and specify a value for the /ALLOCATION qualifier.

Error in allocation quantity (NFT)

Cause: You used the /ALLOCATION qualifier with the COPY command and the remote node did not accept the parameter's value.

Action: Specify a valid COPY/ALLOCATION command. Read the documentation for the remote system and contact the remote system's system administrator.

Error in Directory of: 'nodename::'(NFT)

Cause: There was a problem with the remote directory you specified.

Action: Go to the secondary message for a specific explanation.

Error in maximum record size (NFT)

Cause: You used the /MRS qualifier with the COPY command and the remote node did not accept the value you specified.

Action: Specify a valid COPY/MRS command. Read the documentation for the remote system and contact the remote system's system administrator.

Error in VFC size (NFT)

Cause: You used the /VFC qualifier with the COPY command and specify a fixed-length header which the remote node did not accept.

Action: Specify a valid COPY/VFC command. Read the documentation for the remote system and contact the remote system's system administrator.

**Error Opening File: 'nodename::filename'
Because ... (NFT)**

Cause: NFT could not open the remote file you specified.

Action: Go to the secondary message for a specific explanation.



Error Printing File: 'nodename::filename'

Because . . . (NFT)

Cause: NFT had a problem queuing the remote file to a printer.

Action: Go to the secondary message for a specific explanation.

Error reading 'filename' (LCOUNTRY)

Cause: The LCOUNTRY program could read file 'filename'.

Action: Retry the LCOUNTRY command. If this message is displayed again, restore the file from your back-up diskette.

Error reading file 'filename' (FONT) (KEYB) (SORT)

Cause: The program could not read the file you specify.

Action: Retry the command. If this message is displayed again, restore the file from your back-up diskette.

Error Reading from: 'nodename::filename'

Because . . . (NFT)

Cause: NFT could not copy from the remote file you specified.

Action: Go to the secondary message for a specific explanation.

Error Submitting File: 'nodename::filename'

Because . . . (NFT)

Cause: NFT had a problem running the remote command file you specified.

Action: Go to the secondary message for a specific explanation.

Error writing allocation table (FORMAT)

Cause: An error occurred while writing the file allocation table.

Action: Reformat the diskette and retry the FORMAT program. If this message is displayed again, you cannot use this diskette anymore.



Error writing boot record to disk (FORMAT)

Cause: An error occurred while writing the boot record to the disk.

Action: Use another disk as a system disk. You cannot use this disk as a system disk.

Error writing session log file to disk (SETHOST)

Cause: SETHOST could not access the DECnet directory, or if the disk is full.

Action: Make sure the DECnet directory was installed correctly. If the disk is full, delete some unnecessary files. Try to create a log file again.

Error writing to 'filename' (NET)

Cause: An error occurred while writing to the specified file.

Action: Check the remote computer and retry the command.

Error writing to device (MS)

Cause: You tried to send too much data to a device. The MS-DOS operating system is unable to write the data to the specified device.

Action: Make sure the device is on line and the cables are connected (if the device is a printer). If the device is a printer, turn off the workstation and turn it back on. You may have to restore the back-up copy of your file(s).

Error Writing to: 'nodename::filename'

Because ... (NFT)

Cause: NFT could not copy to the remote file you specified.

Action: Go to the secondary message for a specific explanation.

'Error' error reading file (MS)

Cause: The specified file could not be read. Either the file handle was not open for reading, or the file handle was invalid.

Action: Retry the command. If this message is displayed again, restore the file from your back-up diskette.

Error: Cannot APPEND to list of files. (NFT)

Cause: You tried to append one or more files to the end of more than one file. You can have only one output file.

Action: Retry the command and specify only one output file.

Error: Cannot APPEND to wildcard file name. (NFT)

Cause: You included a wildcard in the output file name when you tried an append operation.

Action: Retry the command and specify the output file name and file extension.

Error: Cannot COPY from wildcard specification to explicit files. (NFT)

Cause: You tried to copy multiple files, using a wildcard, when you wanted the output files to have specific file names and file extensions.

Action: Retry the command and do not use any wildcards.

Error: Cannot SUBMIT list of files. (NFT)

Cause: You tried to submit more than one remote command file (in a list) to be executed on the remote node.

Action: Submit only one remote command file.

Error: Cannot SUBMIT local file. (NFT)

Cause: You tried to execute a local command file.

Action: Submit only a remote command file.

Error: Command string too long. (NFT)

Cause: The command you typed is longer than 256 characters.

Action: Type a command string that is shorter than 256 characters.

Error: File lists not supported for DELETE command. (NFT)

Cause: You tried to delete a list of files.

Action: Retry the DELETE command and use wildcards to delete more than one file.

Error: File lists not supported for DIRECTORY command. (NFT)

Cause: You tried to display a directory of a list of files.

Action: Retry the DIRECTORY command and use wildcards to display multiple file names.

Error: Illegal ALLOCATION quantity: 'text' (NFT)

Cause: You used the /ALLOCATION qualifier with the COPY command and specified a non-numeric value.

Action: Retry the command and specify a numeric value.

Error: Illegal Maximum Record Size: 'value' (NFT)

Cause: You used the /MRS qualifier with the COPY command and specified either a non-numeric value or a value outside the range 0 through 1024.

Action: Retry the command and specify a numeric value inside the range 0 through 1024.

Error: Illegal VFC amount: 'value' (NFT)

Cause: You used the /VFC qualifier and specified either a non-numeric value or a value outside the range 0 through 255.

Action: Retry the command and specify a numeric value inside the range 0 through 255.

Error: Quoted local files are illegal. (NFT)

Cause: You enclosed a local file specification in quotation marks. Use quotation marks only with remote file specifications.

Action: Retry the command and do not enclose the local file specification in quotation marks.



Error: Too many file names in list. Limit is 10. (NFT)

Cause: You included more than 10 file names in a list.

Action: Make sure the list contains no more than 10 file names.

Error: Two paths in a row. (NFT)

Cause: You specified more than one path name without a corresponding file name in between.

Action: Specify a file name after the path name and before another path name.

Error: Unable to type non-ASCII file: 'filename' (NFT)

Cause: You tried to type a file that has a non-ASCII format.

Action: Type a file that has an ASCII-file format.

Error: Unrecognized /CC option: 'option' (NFT)

Cause: You used the /CC qualifier and specified an incorrect record attribute.

Action: Specify one of the following attributes:

None	No attributes
CR	Implied carriage return/line feed
FTN	FORTTRAN carriage control
PRN	Fixed header with carriage control

Error: Unrecognized command: 'command' (NFT)

Cause: You incorrectly typed an NFT command or tried to use a command that NFT could not recognize.

Action: Check your typing, and retry the command. If this message is displayed again, make sure you are typing a valid NFT command.

Error: Unrecognized switch: 'switch' (NFT)

Cause: You incorrectly typed the name of a switch or used a switch that NFT could not recognize.

Action: Check you typing and retry the command. If this message is displayed again, make sure you are typing a valid switch.

Error: Wildcards are not supported in file name lists. (NFT)

Cause: You tried to list files using wildcards.

Action: Do not use wildcards in file name lists.

**Errors found, F parameter not specified
Corrections will not be written to disk (MS)**

Cause: You did not specify the /F qualifier when trying to correct errors using the CHKDSK program.

Action: Retry the CHKDSK command and specify the /F qualifier.

**Errors on list device indicate that it may be off-line
Please check it (MS)**

Cause: Your printer is not turned on.

Action: Turn the printer on and retry the operation.

EXEC failure (MS)

Cause: Either of two things occurred:

- The MS-DOS operating system finds an error reading a command.
- The FILES command in the CONFIG.SYS file is set too low.

Action: Increase the value of the FILES command in the CONFIG.SYS file. Restart the MS-DOS operating system.



FC: cannot open 'filename' – No such file or directory

Cause: One of the files you specified does not exist.

Action: Check your directory for the correct file name.

FC: incompatible switches

Cause: You specified switches that are not compatible. For example, specifying /B and /L together.

Action: Retry the FC command and specify only compatible switches.

FC: out of memory

Cause: You did not have enough memory to perform the file compare.

Action: You can use a memory drive for temporary files. You can also add more memory to your workstation.

FCB unavailable reading/writing drive 'drivename' (MS)

Cause: The MS-DOS operating system detected an error while trying to access a file control block. This is often due to a defective disk.

Action: Press the R key. To stop the program, press the A key.

File allocation table bad (MS)

Cause: The disk is defective.

Action: Use the CHKDSK command to check the disk. Get a new disk and copy what you can from the disk with the bad file allocation table.

File allocation table bad drive 'drivename' (MS)

Cause: The disk is defective.

Action: Run the CHKDSK command to check it.



File cannot be converted (EXE2BIN)

Cause: The input file was not in the correct format.

Action: See information about the EXE2BIN command in Chapter 32.

File cannot be copied onto itself (MS)

Cause: The source file name you specified is the same as the destination file name.

Action: Specify a different destination file name.

File creation error (BR)

Cause: One of the following occurred:

- You are out of space.
- You reached the maximum number of directories.
- The file is a read-only file and cannot be replaced.

Action: Try one of the following:

- Run the CHKDSK command to see how much space is left.
- Delete some files.
- Delete some directories.
- Use the ATTRIB command to determine whether the file is read-only, and if so, use the ATTRIB command to change it.

File is not a back-up file (BR)

Cause: The RESTORE command tried to restore a file that did not have the BACKUP header on it. The file was not saved using the BACKUP command.

Action: Use the COPY command to copy the file to your directory.

File is not a graphic font file 'filename' (GRAFTABL)

Cause: You specified a file that was not a graphic font file.

Action: Make sure you typed the correct file name on the command line. Then make sure the file exists. Retry the GRAFTABL command.



File is READ-ONLY (MS)

Cause: You tried to change a file that is a read-only file.

Action: Use the ATTRIB command to clear the read-only attribute.

**File not found 'filename' (MS) (ATTRIB) (BR) (FC) (FONT)
(KEYB) (LCOUNTRY) (NET)**

Cause: The MS-DOS operating system could not find the file you specified.

Action: Make sure the name is correct and that the file exists in the directory on the disk. Make sure the path is valid.

File not found: 'filename' (NFT)

Cause: NFT could not find the file you specified.

Action: Check your typing. If this message is displayed again, make sure the file exists.

Filename must be specified (MS)

Cause: You did not specify a file name when you started the EDLIN program.

Action: Retry the EDLIN command and specify a file name.

'Filename' contains non-contiguous blocks (MS)

Cause: The file or files you named are not written contiguously on the disk.

Action: Run the CHKDSK command and specify the /F qualifier.

'Filename' file not found (MS)

Cause: You switched disks before your file in the print queue started to print.

Action: Retry the PRINT command.

'Filename' is cross-linked on cluster (MS)

Cause: The file allocation table for the file was corrupt.

Action: Run the CHKDSK command and specify the /F qualifier. If this message is displayed again, back up and reformat the disk, and then restore the files to it.

'Filename' is not in proper format (LCOUNTRY)

Cause: The file you specified is not a valid .COU file.

Action: Make sure you typed the file name correctly. If you did, make sure the country data file is in the proper format (see the *VAXmate Technical Reference Manual*).

'Filename' too large (LCOUNTRY)

Cause: The country data file you specified is too large. The internal country data table is limited to 600 bytes.

Action: Split the file into two smaller files. Retry the LCOUNTRY command.

FIND: File not found (MS)

Cause: You specified a file that did not exist.

Action: Make sure you typed the file name correctly, and make sure the file exists.

FIND: Invalid number of parameters (MS)

Cause: You specified either too many or too few parameters on the command line.

Action: Retry the FIND command and specify the correct number of parameters.

FIND: Invalid parameter (MS)

Cause: You specified an invalid parameter.

Action: Retry the FIND command.

FIND: Read error in 'filename' (MS)

Cause: The FIND program could not read the specified file.

Action: Retry the command. If this message is displayed again, restore the back-up copy of the file.

FIND: Syntax error (MS)

Cause: You typed a command incorrectly.

Action: Make sure you typed the command correctly. Retry the FIND command.

**First cluster number is invalid
Entry truncated (MS)**

Cause: The file directory entry contained an invalid pointer to the data area. If you specified the /F qualifier, the file is truncated to a zero-length file.

Action: Make sure the file is still valid and the data is not corrupt.

Fixups needed – base segment 'hexnumber' (MS)

Cause: The source (.EXE) file contains information indicating that a load segment is required for the file.

Action: Specify the absolute segment address at which the finished module is to be located.

Font code plus keyboard code must be less than 9 characters (SELECT)

Cause: The combined length of the second and third parameters was greater than 8 characters.

Action: Make sure the second and third parameters have a combined length of no more than 8 characters.

For cannot be nested (MS)

Cause: You nested FOR commands in a batch file.

Action: Remove the nested FOR command from the batch file.



Format failure (MS)

Cause: The MS-DOS operating system could not format the disk.

Action: Read the explanation and take the appropriate action. Retry the FORMAT command.

General failure reading/writing drive 'drivename' (MS)

Cause: This message can be displayed for a variety of problems. This error usually requires a knowledgeable programmer to fix the problem.

Action: To retry the command, press the R key.

To stop the command, press the A key.

Hard disk does not respond (FORMAT)

Cause: Either of two things occurred:

- Your hard disk is not working.
- Your workstation does not contain a hard disk.

Action: Reset the workstation by pressing Ctrl/Alt/Del. If this message is displayed again, call Field Service.

Hard disk is not initialized or partitioned (FORMAT)

Cause: Either of two things occurred:

- The hard disk is not initialized.
- The hard disk is not partitioned.

Action: Initialize and partition the hard disk before you try to format it.

Has invalid cluster, file truncated Incompatible system size (MS)

Cause: The system files IO.SYS and MSDOS.SYS occupy more space on the source disk than is available on the destination disk.

Action: Back up the destination disk. Reformat it using the /S qualifier. Restore the files to the destination disk.



Host is down. (NFT)

Cause: You tried to access a remote host that is not operating.

Action: Try to access the remote host later.

Incorrect DOS version

**This program requires MS-DOS V3.10 (ATTRIB) (BR)
(DISKCOPY) (FC) (FONT)
(FORMAT) (KEYB) (MS) (SORT)**

Cause: You tried to use an incorrect version of the MS-DOS operating system on your workstation.

Action: Use DIGITAL's MS-DOS Version 3.10 operating system. Contact your system administrator to obtain the correct version of the MS-DOS operating system.

Incorrect MS-DOS version (NET)

Cause: You tried to install a network with an inappropriate version of the MS-DOS operating system.

Action: Use DIGITAL's MS-DOS Version 3.10 operating system. Contact your system administrator to obtain the correct version of the MS-DOS operating system.

Incorrect number of operands (NET)

Cause: There is no keyword specified in the NET command.

Action: Use the NET HELP command to check the command format.

Incorrect number of parameters (MS) (SELECT)

Cause: You specified either too many or too few parameters on the command line.

Action: Check the command format and retry the command. Make sure you specify the correct number of parameters.



Incorrect parameter (MS)

Cause: One of the parameters you specified is invalid.

Action: Make sure the parameter is valid and typed correctly.

Initial directory not found (WIN)

Cause: The initial directory for this program could not be found or was invalid.

Action: Check the PIF file for the program and be sure that the initial directory setting is correct.

Insert 'programname' or 'diskname' in drive 'drivename' (WIN)

Cause: MS-Windows needed a program or file that was not on the disk in the active drive.

Action: Insert the specified disk and select OK.

Insert DOS diskette in drive 'drivename' and strike any key when ready (MS)

Cause: You specified the following command, but the disk in drive 'drivename' does not contain the MS-DOS operating system files:

```
A>FORMAT /S 
```

Action: Insert a system diskette in drive 'drivename'.

Insert system diskette in drive 'drivename' (MS)

Cause: You did not have a system diskette in the diskette drive.

Action: Insert a system diskette into the diskette drive.



Insufficient disk space (MS) (SETUP) (SORT)

Cause: There is not enough disk space to complete the specified operation.

Action: Delete some files, get a new diskette, or create the file on another partition.

If you are running SETUP and this message is displayed, delete some files from your destination disk and run SETUP again. SETUP requires approximately 446700 bytes on the destination disk to run successfully.

Insufficient memory (MS) (BR) (SORT)

Cause: There was not enough memory to run the specified command. You may have too many terminate and stay resident programs or your directory structure may be too complex.

Action: Because certain MS-DOS commands and programs are terminate and stay resident, restarting the workstation may free enough memory to run the desired program. If not, you must edit the CONFIG.SYS file, remove some of them, then restart the workstation. Also, if you installed any device drivers, delete them from the CONFIG.SYS file.

Insufficient room in root directory Erase files in root and repeat the CHKDSK command. (MS)

Cause: You have reached the maximum number of files allowable in the root directory.

Action: Delete some files in the root directory, or move some files to subdirectories.



Intermediate file error during pipe (MS)

Cause: One of the temporary files used by the PIPE command had an error.

Action: Retry the PIPE command. If this message is displayed again, get another diskette. Copy all files to the diskette, and retry the PIPE command.

Internal error (FC)

Cause: The FC utility had an internal logic error.

Action: Retry the FC command.

Invalid alias (PERMIT)

Cause: You specified an alias which contains an invalid character.

Action: Make sure you type only valid characters in the alias. The alias can have the characters A-Z, 0-9, ^, -, _, ., %, &, ~, and \$.

Invalid alias or password (NET)

Cause: You specified an alias or password which contains an invalid character.

Action: Make sure you type only valid characters in the alias and password. The alias can have the characters A-Z, 0-9, ^, -, _, ., %, &, ~, and \$.

Invalid characters in volume label (LABEL)

Cause: You typed invalid characters in the volume label.

Action: Make sure the volume label contains only letters and numbers.

Invalid command line parameters. (MODE)

Cause: You typed invalid parameters on the command line.

Action: Check for misspelling and for missing punctuation. Retry the command.



**Invalid COMMAND.COM
Insert COMMAND.COM disk in default drive
and strike any key when ready (MS)**

Cause: The MS-DOS operating system needs to reload the COMMAND.COM file from disk. However, either the MS-DOS operating system cannot find the COMMAND.COM file on the disk, or the copy found is invalid.

Action: Insert a disk which contains a copy of the COMMAND.COM file into the default drive.

**Invalid COMMAND.COM
Insert COMMAND.COM disk in drive 'drivename'
and strike any key when ready (MS)**

Cause: The MS-DOS operating system needs to reload the COMMAND.COM file from disk. However, the MS-DOS operating system cannot find the COMMAND.COM file on the disk, or the copy found is invalid.

Action: Insert a disk into drive 'drivename' which contains a copy of the COMMAND.COM file.

Invalid computer name (NET)

Cause: You tried to connect to a computer that did not have an entry in the DECNODE.DAT file.

Action: Run the NET DEFINE command to add a node name to the DECNODE.DAT file. Run the NET LIST command to display the node names in the DECNODE.DAT file.

Invalid country code (MS)

Cause: You specified an invalid number for the country code in the CONFIG.SYS file.

Action: Specify a valid country code.

Invalid date**Enter new date (mm-dd-yy): (MS)**

Cause: You entered invalid numbers or separators for the date.

Action: Enter a valid date.

Invalid date received from node 'nodename' (NET TIME)

Cause: An invalid time was received from the node 'nodename'.

Action: Retry the NET TIME command.

Invalid destination drive specification (BR)

Cause: You specified a destination drive that does not exist on your system.

Action: Specify a valid destination drive.

Invalid device (MS) (NET)

Cause: You specified an invalid device.

Action: Make sure you type the device name correctly.

Invalid directory (MS)

Cause: You specified a directory that is either invalid, or nonexistent.

Action: Run the DIR command to display a list of files and directories.

Invalid disk change reading/writing drive 'drivename' (MS)

Cause: You changed a disk in a drive when it was not allowed.

Action: To retry the operation, reinsert the disk into the drive and press the R key.

Invalid drive in search path (MS)

Cause: The drive does not exist.

Action: Specify only valid drives in the search path.

**Invalid drive or file name (MS)**

Cause: You specified an invalid drive or file name.

Action: Specify a valid drive or file name.

Invalid drive specification (LABEL) (MS)

Cause: You specified an invalid drive.

Action: Specify a valid drive.

Invalid graphic font file name (GRAFTABL)

Cause: You specified an invalid font file name.

Action: Specify a valid font file name. Use the DIR command to display a list of files in the current directory.

Invalid input line (GRAPHICS)

Cause: You specified invalid information on the command line.

Action: Retry the GRAPHICS command and specify valid information.

Invalid number of parameters (FC) (MS) (BR)

Cause: You specified either too many or too few parameters on the command line.

Action: Retry the command and specify the correct number of parameters.

Invalid parameter (ATTRIB) (BR) (FC) (FONT) (JOIN) (KEYB) (MS) (SUBST) (SORT)

Cause: One of the parameters you used is invalid.

Action: Make sure you:

- Entered the parameter correctly
- Did not join drives created by the SUBST command
- Did not use the SUBST command on joined paths

Then, retry the command.



Invalid path (BR)

Cause: You specified a path that does not exist.

Action: To see the current valid paths, type:

A>PATH

Invalid path or file name (MS)

Cause: You specified an invalid path or file name.

Action: Specify a valid path or file name.

Invalid path, not directory, or directory not empty (MS)

Cause: You tried to remove a directory that is any of the following:

- Invalid
- Not a directory
- Not empty

Action: Try one of the following:

- Specify a valid path.
- Use the RMDIR command and specify a valid directory.
- Empty the directory before you try to remove it.

Invalid protocol negotiated from node 'nodename' (NET TIME)

Cause: The remote node you specified could not communicate with your node.

Action: Retry the NET TIME command and specify another remote node.

Invalid Set-Up file (TE)

Cause: The Set-Up configuration file was not the same version as the terminal emulator. The information stored was invalid.

Action: Delete the Set-Up configuration file and create a new one.

**Invalid source drive specification (BR)**

Cause: You specified a source drive that did not exist.

Action: Make sure the source drive you specify is on your system.

Invalid source drive specified (DISKCOPY)

Cause: You specified a source drive that did not contain a floppy diskette. You can only use the DISKCOPY command with floppy diskettes.

Action: Retry the DISKCOPY command and specify drive A as the source drive.

Invalid sub-directory entry (MS)

Cause: The subdirectory you specified did not exist or was invalid.

Action: Make sure the subdirectory exists and is valid. Retry the command.

Invalid target drive specified (DISKCOPY)

Cause: You specified a target drive that did not contain a floppy diskette. You can only use the DISKCOPY command with floppy diskettes.

Action: Retry the DISKCOPY command and specify drive A as the destination drive.

Invalid time (MS)

Cause: You specified an invalid time in response to the time prompt.

Action: Enter a valid time.

Invalid time received from node 'nodename' (NET TIME)

Cause: An invalid time was received from the node 'nodename'.

Action: Retry the NET TIME command.

Invalid working directory (MS)

Cause: Your disk is bad.

Action: Replace the disk or make another copy from your back-up diskette.

Label not found (MS)

Cause: The batch file you just executed contained a GOTO to a non-existent label.

Action: Edit the batch file and make sure the GOTO command contains a label that exists in the file.

Last back-up diskette not inserted (BR)

Cause: You specified the /A qualifier, but did not insert the last diskette.

Action: Find the last diskette and insert it into the diskette drive.

Last file not backed up (BR)

Cause: The last file was not backed up for any of the following reasons:

- You pressed Ctrl/C.
- You need to insert a new diskette.
- Your hard disk has no more space.

Action: Try one of the following:

- Back up the displayed file.
- Insert a new diskette.
- Delete some files from the hard disk and retry the BACKUP command.

**LAT – Datalink Initialization has failed.**

Cause: You tried to start the LAT before installing Datalink (DLL).

Action: Type:

DLL

Now try to start the LAT again.

LAT – Error specifying service table size – using default.

Cause: You tried to set the service table size to an invalid value when you started the LAT.

Action: Try to start the LAT again with a valid value for the service table size.

LAT – Error specifying group codes – using default.

Cause: You tried to set the group codes to an invalid value when you started the LAT.

Action: Try to start the LAT again with a valid value for the group codes.

LAT – Error specifying retransmit limit – using default.

Cause: You tried to set the retransmit limit to an invalid value when you started the LAT.

Action: Try to start the LAT again with a valid value for the retransmit limit.

Line too long (MS)

Cause: In your attempt to replace a line, you expanded the line beyond the 253-character limit.

Action: Divide the your message into two lines and retry the REPLACE command.



Loading fonts is not supported on this machine (FONT)

Cause: You tried to load a font file on a machine other than a workstation.

Action: Use the FONT command only on a VAXmate workstation.

Loading keyboard maps is not supported on this machine (KEYB)

Cause: You tried to load a keyboard map file on a machine other than a workstation.

Action: Use the KEYB command only on a VAXmate workstation.

Lock violation reading/writing drive 'drivename' (MS)

Cause: A program tried to access a file currently being used by another program.

Action: To stop the operation, press the A key.

You can also wait a few seconds, and retry the operation by pressing the R key.

**x lost clusters found in y chains.****Convert lost chains to files (Y/N)? (MS) (CHKDSK)**

Cause: The CHKDSK command found lost files for which the directory entry was lost. This loss usually occurs if you exit a program without closing the files.

Action: If you use the /F qualifier and respond Y to this prompt, the CHKDSK program creates a file (FILE???.CHK) in the root directory for you to resolve the problem.

If you did not use the /F qualifier, the CHKDSK program does nothing.

If you use the /F qualifier and respond N to this prompt, the following is displayed:

```
x bytes disk space free
```

If you do not use the /F qualifier and respond N to this prompt, the following is displayed:

```
x bytes disk space would be free
```

MDRIVE installation failed (MDRIVE)

Cause: A memory drive could not be installed on your workstation.

Action: Look at the rest of the message displayed on the screen to determine why the installation failed.

Memory allocation error**Cannot load MS-DOS, system halted (MS)**

Cause: The MS-DOS operating system could not be loaded at system start-up time.

Action: Restart the MS-DOS operating system. If this message is displayed again, call Field Service.



MORE: Incorrect DOS version (MS)

Cause: You tried to use the MORE command on a version of the MS-DOS operating system that does not support it.

Action: Use the MORE command with MS-DOS Version 3.10 or later.

Multiple destinations not allowed (WIN)

Cause: You tried to copy a single file to more than one new file, or tried to rename a single file with more than one new name.

Action: Copy or rename the file to a single destination.

Multiple files not allowed (WIN)

Cause: You specified too many file names for a command.

Action: Retry the command and specify only one file name.

Must specify destination line number (MS)

Cause: You did not specify a destination line number when you copied and inserted a line using EDLIN.

Action: Specify a destination line number when you copy and insert a line using EDLIN.

Must specify ON or OFF (MS)

Cause: You did not specify the ON or the OFF parameter.

Action: Retry the command and specify either ON or OFF.



Name is too long for local file. Limit is 12 characters.

Enter local file name: (NFT)

Cause: You typed a name that is too long for the MS-DOS operating system to accept.

Action: Limit the local file name to 12 characters or less.

'Name' is not a registered workstation name (PERMIT)

Cause: You specified a name that was not in the permanent or volatile database.

Action: Define the workstation name using the NET DEFINE command.

Need more disk space (WIN)

Cause: You tried to load a standard application that required MS-Windows to swap another application to disk. There was insufficient disk space for swapping.

Action: Close one of the other standard applications you have running. Retry the command. If there is still limited space remaining on the swap disk, you may have to delete some files.

Need WINOLDAP files to run program (WIN)

Cause: The program you selected requires the MS-Windows system files WINOLDAP.MOD and WINOLDAP.GRB to run.

Action: These files should be in the same directory as your other MS-Windows system files. If this message is displayed again, check the directory to make certain that they are available, and then try running the program again.

NET 801: Remote computer not listening

Cause: You tried to do any of the following:

- Use a network device that someone else is using through a PERMIT operation.
- Access a computer that is busy servicing other requests
- Use a network device on a server that has no sessions available

Action: Retry the command or operation. If this message is displayed again, the server probably has no sessions remaining to service your requests.

Make sure the server is running on the remote computer.

NET 803: Network path not found

Cause: The remote node is unknown or unreachable.

Action: Make sure the server is running on the remote computer. If this message is displayed again, contact your system administrator.

NET 804: Network busy

Cause: The network is busy and cannot perform your request.

Action: Send your request later.

NET 805: Network device no longer exists

Cause: The device you tried to access is no longer available. This message is displayed for any of the following reasons:

- You explicitly try to access the device.
- You start a program and the invalid drive exists in your PATH statement.
- Your program ends.



Action: Stop your request. Type the following command to see a list of the devices you are using:

```
A> NET USE <Return>
```

Type the following command for all devices that have a status of ERROR:

```
A> NET USE drv: /D 
```

Check with the server's system administrator about the availability of the device.

NET 808: Incorrect response from network

Cause: The remote computer could not perform the task you wanted it to perform.

Action: Make sure you are specifying the correct remote computer for the command or task you are attempting. If not, specify the correct computer.

NET 809: Network request not supported

Cause: The remote computer could not perform the task you wanted it to perform.

Action: Make sure you are specifying the correct remote computer for the command or task you are attempting. If not, specify the correct computer.

NET 810: Unexpected network error

Cause: An unexpected network error occurred.

Action: Try to stop your application. Then, restart the MS-DOS operating system by pressing:

Restart the workstation network software. Connect to the network again.

If this message is displayed again, contact your system administrator.

NET 812: Print queue full

Cause: The print queue was full.

Action: Send your request later.

NET 813: Not enough space for print file

Cause: The computer sharing the printer did not have enough disk space to store the file until it was printed.

Action: Send your request later.

NET 814: Print file was canceled

Cause: The print file you submitted to a network printer was canceled by the user at the server computer.

Action: To stop the print operation, press the A key. Retry the print operation later.

NET 816: Access denied

Cause: Any of the following occurred:

- The password you specified was incorrect.
- The server did not allow your connection.
- The node you tried to access has been improperly defined.

Action: Try one of the following:

- Make sure you typed the password correctly. If you did, the password may have changed. Contact the server's system administrator for the correct password.
- Make sure you are allowed to access this resource. Contact your system administrator about access privileges.
- Contact your system administrator.

If you are a system administrator, use the VAXmate server CLEAR NODE command to remove the node from the permanent and the volatile databases. Then, add the node to both databases using the VAXmate server DEFINE NODE command.

**NET 817: Network device type incorrect**

Cause: The local device type was different from the workstation network device type. You tried to use a network disk or directory and used device LPT1 through LPT3 as a DOS name, or you used a network printer and used device A through Z as a DOS device name.

Action: Send the request using the correct device name.

NET 818: Network name not found

Cause: The network name you specified was incorrect.

Action: Make sure you spelled the name correctly. If you did, the name is no longer on the network.

NET 819: Network name limit exceeded

Cause: You tried to redirect too many devices.

Action: Disconnect some of the network devices and directories you are currently connected to using the NET USE command. You can also increase the number of redirections by adding the /L:n qualifier to your NET START RDR command line. The default for "n" is four.

NET 820: Network session limit exceeded

Cause: You exceeded the maximum number of allowable logical links currently set in the DECnet driver.

Action: Change the number of allowable links using the NCP command DEFINE EXEC MAXIMUM LINKS n. The default for "n" is four. The new value takes effect after you restart your workstation.

NET 822: Print of disk redirection is paused

Cause: The printer or disk redirector was paused. Your request could not be performed at that time.

Action: To continue print or disk redirection, type:

A> NET CONTINUE

Send your request later.



NET 825: Network data fault

Cause: You tried to write data to a network disk or diskette that was full.

Action: To stop the operation, press the A key. Tell the user at the server computer that the disk or diskette is full.

Network already started (NET)

Cause: You tried to start the network after it was already started.

Action: Continue to use the network. If you cannot continue using the network, restart the MS-DOS operating system by pressing:

A >

Network error (NET)

Cause: An unexpected network error occurred. Because of this error, your command cannot be completed.

Action: Load the network before attempting an NCP operation.

Network is down. (NET)

Cause: You tried to perform network activity on a network that was not currently available.

Action: Try to access the network later.

Network Is In Use [- Exit Set-Up?] (TE)

Cause: You tried to open a fifth session. Only four simultaneous Network Terminal Service sessions are allowed.

Action: Find another application using a Network Terminal Service (usually another instance of the VT220 terminal emulator) and log out of the host or terminate the application.

If this message occurs while trying to exit Set-Up, you have the option of remaining in Set-Up or exiting Set-Up, in which case no connection will be made to the network.



Network not installed (NET)

Cause: Either of two things occurred:

- The install check for the network fails. You must have the appropriate hardware and software to run the network.
- You try to execute a network command without starting the network.

Action: Make sure you have the appropriate hardware and software to run the network. Then type:

```
A>NET START RDR 
```

Retry the command.

Network not started (NET TIME) (NET USE)

Cause: You tried to execute the NET TIME or NET USE command but the network was not started.

Action: Start the network by typing:

```
NET START RDR 
```

Network Terminal Services driver not installed (TE)

Cause: The Network Terminal Services driver was not installed prior to starting MS-Windows or the VT240 terminal emulator.

Action: Close the session, install the driver, and restart the session. To install the driver, type:

```
A>NET START LAT 
```

New file (MS)

Cause: EDLIN could not find the file you specified.

Action: Make sure you typed the file name correctly.



No entries in list (NET)

Cause: You used the NET USE command without first connecting to any network resources.

Action: Type:

```
A>NET START RDR 
```

Retry the NET USE command.

No files match 'filename' (MS)

Cause: You specified a file name for a file that could not be found.

Action: Make sure you typed the file name correctly.

No files were found to back up (BR)

Cause: No files were found on the specified back-up source disk to back up.

Action: Make sure you typed the file specification correctly. If you did not type the file specification correctly, retry the BACKUP command with the correct file specification.

No files were found to restore (BR)

Cause: No files were found on the source disk to restore.

Action: Make sure you typed the file specification correctly. If you did type the file specification correctly, retry the RESTORE command and specify the correct file(s).

**No free file handles****Cannot start COMMAND.COM, exiting (MS)**

Cause: There were not enough free file handles for the COMMAND.COM file to operate properly.

Action: Restart the MS-DOS operating system by pressing:

A>

If this message is displayed again, increase the value of the FILES command in the CONFIG.SYS file.

No more files can be opened (WIN)

Cause: The MS-DOS operating system is already running the maximum number of files.

Action: Close one or more of the applications you are running and try running the selected program again.

No number stored (TE)

Cause: You tried to dial a number (A-J) not stored in Set-Up.

Action: Store the number using the Telephone Set-Up screen.

No paper error writing device 'devicename' (MS)

Cause: The printer is out of paper.

Action: Fill the printer with paper.

No room for system on destination disk (MS)

Cause: There was not enough room for the system files on the destination disk.

Action: Save the contents of the disk. Then, delete all files from the disk. Finally, run the SYS command to copy the system files to the disk.

No room in directory for file (MS)

Cause: You tried to save a file in a full root directory.

Action: Retry the command and save the file in a subdirectory. Subdirectories are not as limited as the root directory.

No route to host. (NFT)

Cause: Any of the following:

- The network driver was not loaded.
- You were not using the correct version of the network driver.
- The line state was OFF.
- The remote host was not reachable.

Action: Make sure you are using the correct version of the network driver. Make sure the network driver is loaded. Make sure the line state is ON.

Non-DOS disk error reading/writing drive 'drivename' (MS)

Cause: The MS-DOS operating system did not recognize the disk format.

Action: To stop the command, press the A key.

You cannot use this disk with the MS-DOS operating system. Reformat the disk using the FORMAT command.

Not a font file (FONT)

Cause: The file you specified was not a text font file.

Action: Retry the FONT command and specify a valid font file.

Not a keyboard map file (KEYB)

Cause: You specified a file that was not a keyboard map file.

Action: Retry the KEYB command and specify a valid keyboard map file.

**Not a system disk
Press any key (MS)**

Cause: The disk does not contain the system files IO.SYS and MSDOS.SYS.

Action: Get another diskette that contains the system files IO.SYS and MSDOS.SYS. Restart the MS-DOS operating system.

Not able to back up file (BR)

Cause: The BACKUP command could not back up this file. The file could not be backed up because of a read/write error or because of a file open error.

Action: Restart the MS-DOS operating system and retry the BACKUP command. If this message is displayed again, make sure the file exists. If it does exist, save the file using the COPY command, or increase the value of the FILES command in the CONFIG.SYS file.

Not able to restore file (BR)

Cause: No files were found to restore.

Action: Make sure you typed the file specification correctly. If you did not type the file specification correctly, retry the RESTORE command with the correct file specification.

Not enough extended memory to install MDRIVE (MDRIVE)

Cause: There was not enough extended memory to install a memory drive.

Action: Make sure your workstation has extended memory. If it does have extended memory, specify a smaller memory drive. If it does not have extended memory, do not specify the /E qualifier.



Not enough memory (MS)

Cause: The MS-DOS operating system did not have enough memory to execute the specified command.

Action: Decrease the number of device drivers as well as terminate and stay resident programs that you have in memory. If the message is displayed again, edit the CONFIG.SYS file and decrease the value of the BUFFERS command and the FILES command.

Not enough memory (WIN)

Cause: You initiated an action, such as copying a file, that required more memory than MS-Windows currently had available.

Action: Close one or more application programs and retry the command.

Not enough memory available for DISKCOPY operation (DISKCOPY)

Cause: There was not enough memory to execute the DISKCOPY command.

Action: Remove some terminate and stay resident programs. Retry the DISKCOPY command.

Not enough memory to display entire directory (WIN)

Cause: The MS-DOS Executive required more memory than was currently available to display the full directory.

Action: Close one or more application programs.

Not enough memory to install MDRIVE (MDRIVE)

Cause: Either of two things occurred:

- You need more memory to install a memory drive.
- You need to make the memory drive smaller.

Action: Either install more memory or make the memory drive smaller.

**Not enough memory to run (WIN)**

Cause: MS-Windows tried to run a standard application that required more memory than was currently available.

Action: Close an application, then select the Run command. If this message is displayed again, continue closing applications and selecting the Run command until either the message is no longer displayed or until the MS-DOS Executive is the only remaining application. The program will now run after enough memory has been freed by closing other applications, and if the MS-DOS Executive is the only application running.

Not enough memory to run 'filename' (WIN)

Cause: Either of two things occurred:

- MS-Windows tried to run a program that required more memory than was currently available.
- Your version of MS-Windows does not support one or more of the run-time routines.

Action: Try one of the following:

- Close one or more applications. Select the Run command again.
- If this message is displayed and only the MS-DOS Executive window is running, you cannot run the specified file with this version of MS-Windows.

Not enough room to merge the entire file (MS)

Cause: There was not enough memory to hold the file during a TRANSFER command.

Action: Use a memory drive for temporary files. Remove some device drivers. Retry the TRANSFER command.



Not ready error reading/writing drive 'drivename' (MS)

Cause: The MS-DOS operating system could not access the drive you specified.

Action: Make sure the disk drive door is closed. Make sure the disk is inserted into the drive right side up. To retry the command, press the R key.

Out of environment space (MS)

Cause: There was not enough room in the program environment to accept more data.

Action: Do the following:

- Make the PATH command shorter.
- Make the APPEND command shorter.
- Decrease the number of SET commands you define.

Parameters of hard disk cannot be determined. (FDISK)

Cause: One of the following occurred:

- There is no hard disk.
- The hard disk is installed incorrectly.

Action: Make sure you have a hard disk. Make sure that it is installed correctly.

The path entry is too long (FONT) (GRAFTABL) (KEYB) (LCOUNTRY) (SORT)

Cause: You specified a path entry of more than 64 characters.

Action: Specify a path entry of 64 characters or less.

The path is not set (FONT) (GRAFTABL) (LCOUNTRY) (SORT)

Cause: The 'PATH=' string is not set.

Action: Set the path.



The path is not set and the file was not found in the current directory or root directory: 'filename' (KEYB)

Cause: The path is not set or the file was not found.

Action: Set the path and check the current and root directories for a valid file name.

Path not found. (MS)

Cause: You specified an invalid path name.

Action: Check your typing. If this message is displayed again, make sure the path exists.

The PATH= string was not found in the environment (FONT) (GRAFT-ABL) (KEYB) (LCOUNTRY) (SORT)

Cause: Your environment space is corrupt.

Action: Restart the workstation.

PIF Error

**Program directly modifies memory.
Cannot continue processing.**

Cause: You executed a command or ran a program that directly modified memory.

Action: Restart the system.

Action: Make sure there is a hard disk in your workstation. Make sure the hard disk is installed correctly.



Please run DLL before starting LAT

Cause: You tried to start the LAT before starting the Datalink (DLL).

Action: Type:

NET START LAT

Please run SCH and DLL before starting Datalink

Cause: An error related to the SCH program was detected during network start-up.

Action: Type:

NET START RDR

Please run SCH and DLL before starting LAT

Cause: You tried to start the LAT before starting the SCH program and Datalink (DLL).

Action: Type:

NET START LAT

Print quality HIGH is not supported on STD type printers. (MODE)

Cause: You specified the H parameter for an incompatible printer. The H parameter is only valid on the LA50 type printer.

Action: Specify the H parameter only with the LA50 printer. Retry you current request without the H parameter.

PRINT queue is full (MS)

Cause: The print queue was full. The default limit for the print queue is 10 files.

Action: Run the PRINT command and specify the /Q qualifier. The /Q qualifier sets the number of files allowed in the print queue. The maximum number you can set is 32 files (minimum is 4).

Print switch not supported with this command. (NFT)

Cause: You tried to use the /PRINT switch with a command that does not support it.

Action: Retry the command without the /PRINT switch, or use a command that supports the /PRINT switch.

Printer not ready (WIN)

Cause: Either of two things occurred:

- The printer is out of paper.
- The printer is off.

Action: Make sure the printer paper is properly installed. If the paper is properly installed, make sure the printer is connected and turned on.

Printer port is in use (TE)

Cause: While using the VT220 terminal emulator, you tried to use printer-controller mode, but another application is using the printer.

Action: Try again after the current print job is finished.



Printer type UNKNOWN (GRAPHICS)

Cause: You specified an unknown printer type.

Action: Run the MODE command and specify your printer.

Probable non-DOS disk

Continue (Y/N)? (MS)

Cause: The disk you used was a non-DOS disk. This message usually indicates that the file allocation table is bad.

Action: To continue the CHKDSK processing, press the Y key. To stop CHKDSK processing, press the N key.

Problem with temporary file for remote file names. (NFT)

Cause: A problem occurred with the temporary file due to lack of disk space.

Action: Increase the available disk space.

Processing cannot continue (MS)

Cause: There was not enough memory to execute the CHKDSK command for this disk.

Action: Delete some terminate and stay resident programs. Use a memory drive for temporary files. If you have any user-installable device drivers, remove some of them. You can also restart the MS-DOS operating system and install fewer terminate and stay resident programs.

Program too big to fit in memory (MS)

Cause: You tried to load and execute a program that was bigger than your available memory.

Action: Delete some terminate and stay resident programs. Try using a memory drive for temporary files. If you have any user-installable device drivers, remove some of them. You can also restart the MS-DOS operating system and install fewer terminate and stay resident programs.



Read error in 'filename' (FC) (MS)

Cause: The MS-DOS operating system could not read the specified file.

Action: Retry the command. If this message is displayed again, restore the file from your back-up diskette.

Read fault error reading/writing drive 'drivename' (MS)

Cause: The MS-DOS operating system could not read from, or write to, drive 'drivename'.

Action: To retry the command, press the R key. If this message is displayed again and you want to stop the command, press the A key.

Received an invalid SMB message from node 'nodename' (NET TIME)

Cause: You tried to execute the NET TIME command but the node 'nodename' send a bad message.

Action: Contact your system administrator.

Redirector already installed (MS)

Cause: You tried to install the redirector after it was already installed.

Action: Do not try to install the redirector again. You can use the network as you normally would.

Reinsert diskette for drive 'drivenumber' (MS)

Cause: You removed the diskette in drive A.

Action: Reinsert the diskette being formatted into drive A.

Remote system DAP buffer size < 256. (NFT)

Cause: Two programs on different systems have such different buffer sizes that they could not communicate with one another.

Action: Read the documentation for the remote system and contact the remote system's system administrator.

Restore file sequence error (BR)

Cause: You tried to restore a file in an incorrect order.

Action: Insert another diskette into the floppy diskette drive.

Resynch failed. Files are too different. (FC)

Cause: The number of lines in the internal line buffer is less than the number of consecutive, differing lines.

Action: Specify the /LB qualifier with a larger number if you want to display all the line differences.

Sector not found error reading/writing drive 'drivename' (MS)

Cause: The MS-DOS operating system could not read from, or write to, the disk. The disk may be unusable.

Action: To retry the command, press the R key.

If this message is displayed again and you want to stop the command, press the A key. Copy all files to a new diskette, or back up and reformat your hard disk.

Sector size too large in file 'filename' (MS)

Cause: The specified device driver loaded by the CONFIG.SYS file uses a sector size larger than that of any other device driver on the system. You cannot run this device driver.

Action: Check your source code for bugs.

Seek error reading/writing drive 'drivename' (MS)

Cause: The MS-DOS operating system could not read from, or write to, the disk. The disk may be unusable.

Action: To retry the command, press the R key. If this message is displayed again and you want to stop the command, press the A key. Copy all files to a new diskette, or back up and reformat your hard disk.

Selected country is not contained in 'filename' (LCOUNTRY)

Cause: The country code you specified was not in the file.

Action: Load the .COU file that contains the correct country information.

Service active (TE)

Cause: You tried to change an active Network Terminal Service in the VT240 terminal emulator's Communications Set-Up screen. Only inactive services can be changed.

Action: Exit Set-Up and log out of the active session, making it inactive. Then, reenter Set-Up and change the inactive service.

Session n does not exist. (SETHOST)

Cause: There was no saved session with this number.

Action: Use the /SHOW qualifier to see which sessions do exist.

Set-Up file 'filename' is incompatible and will be ignored (TE)

Cause: You tried to load a Set-Up configuration file which was of the wrong format or wrong version. This can occur when starting the VT220 Emulator or using the 'Recall Set-Up Parameters' option in Set-Up.

Action: Make sure the file is not damaged. Make sure the version number is right. If the version number is wrong, you can recreate it by entering Set-Up, making the parameter settings you desired, and saving them with the 'Save Set-Up Parameters' option.

SETHOST could not open input file. (SETHOST)

Cause: Your attempt to redirect input failed.

Action: Make sure the input file exists before trying to redirect input from that file.



SETHOST could not open log file. (SETHOST)

Cause: Your attempt to redirect output to a specified file failed.

Action: Make sure the disk is not full. If it is full, delete unnecessary files and try again.

**SETUP is not able to create the directory you specified.
Please specify another directory (SETUP)**

Cause: One of following occurred:

- The network device does not exist.
- The network device is read-only.
- The destination drive is not currently reachable.
- The destination device is full.

Action: Choose another destination device. If you want to use a device that is not currently reachable, enter another valid drive and directory specification, quit at the next screen, and then restart SETUP.

SETUP requires a minimum of 216K free to run (SETUP)

Cause: SETUP cannot find enough memory to run.

Action: Make sure all memory is usable. SETUP needs 216K bytes of memory to run to completion.

SHARE already installed (MS)

Cause: You tried to install file sharing after it was already installed.

Action: Do not try to install file sharing again.

Sharing violation reading drive 'drivename' (MS)

Cause: A program tried to access a file that was being used by another program.

Action: To stop the command, press the A key. To retry the command, press the R key.



Source and target disks are the same (BR)

Cause: You tried to back up files to the same disk from which you copied them.

Action: Make sure the source drive and target drive specifications are different.

Source diskette cannot be copied (DISKCOPY)

Cause: The source and target diskettes were incompatible.

Action: Insert a compatible target diskette into the target drive and retry the DISKCOPY command.

Source does not contain back-up files (BR)

Cause: The source disk had no back-up files on it.

Action: Make sure you typed the information on the command line correctly. If you did, make sure the back-up files are in the specified directory. If they are not, retry the command and specify the correct directory.

The specified file is invalid or does not exist: 'filename' (FONT) (GRAFTABL) (KEYB) (LCOUNTRY) (SORT)

Cause: The file is not accessible or the file cannot be found.

Action: Check to see if the file exists or if it contains any illegal characters.

Specified MS-DOS search directory bad (MS)

Cause: One of the following occurred:

- The SHELL command in the CONFIG.SYS file is incorrect.
- The COMMAND.COM file does not exist.
- The COMMAND.COM file is not where you specified it to be.

Action: Try the following:

- Check the SHELL command in the CONFIG.SYS file.
- Make sure the COMMAND.COM file is where you think it is.



Start session error (TE)

Cause: There was an error accessing the Network Terminal service. The service cannot be initiated.

Action: Contact you system administrator.

Syntax error (MS)

Cause: You typed an illegal string when executing the FIND command.

Action: Enclose the string with quotation marks.

Target disk cannot be used for back-up (BR)

Cause: One of the following occurred:

- The BACKUP command cannot access the disk.
- The floppy diskette is bad.
- There are hardware problems.

Action: Reformat the diskette using the FORMAT command. Retry the BACKUP command. If this message is displayed again, get a new diskette. If there are hardware problems, call Field Service.

Target diskette has errors

Attempting to recover target diskette by reformatting bad tracks (DISKCOPY)

Cause: The target diskette had a bad spot.

Action: This message is for informational purposes. Because the target diskette must be reformatted, the DISKCOPY operation will take significantly more time. If this problem occurs again, the "WARNING: Error writing target diskette" message is displayed. See that message for more information about how to proceed.

Target diskette is write protected

**Remove write protect tab and press any key to continue
Or press <CTRL/C> to abort DISKCOPY (DISKCOPY)**

Cause: The target diskette was write protected.

Action: Remove the write-protect tab and reinsert the diskette into the target drive.

**Target diskette must be Rainbow RX50 pre-formatted
Disk copy failed (DISKCOPY)**

Cause: You tried to execute the DISKCOPY command with a target diskette that was not formatted.

Action: Format the target diskette using the FORMAT command. Reinsert the diskette into the target drive. Retry the DISKCOPY command.

Target drive cannot write high density diskettes (DISKCOPY)

Cause: You tried to copy the contents of a high-density source diskette to a low-density target diskette.

Action: Insert a high-density target diskette into the target drive. Retry the DISKCOPY command.

Target is full (BR)

Cause: The target disk had no room to receive restored files.

Action: Use another disk as the target disk.

The 96 column mode is not supported for STD type printers. (MODE)

Cause: You tried to use 96-column mode with an STD type printer. The 96-column mode is valid only for the LA50-type printers.

Action: Do not specify 96-column mode with an STD printer.

The last file was not restored (BR)

Cause: One of the following occurred:

- You press **Ctrl/C**.
- It is time to switch diskettes.
- There is no more space on the hard disk.

Action: Try one of the following:

- Retry the RESTORE command.
- Insert a new diskette.
- Delete some files from the hard disk and retry the command.



**Timed out waiting for DATE/TIME from remote node 'nodename'
(NET TIME)**

Cause: You tried to execute the NET TIME command but the node 'nodename' was too busy to service your request.

Action: Retry the NET TIME command and specify another node name.

**To activate Compose, use KEYB to load an ISO or MCS keyboard file
(TE)**

Cause: You pressed the Compose key without first loading the ISO or MCS keyboard map file.

Action: Use the MS-DOS KEYB command to load the ISO or MCS keyboard map file. Now you can use the Compose key.

Too many clocks or timers (WIN)

Cause: You tried to run a program that requires a system clock but no more are available.

Action: Exit or close one of the other application programs. Try running your program again.

Too many files open (MS)

Cause: No more system file handles were available for you to use to open a file.

Action: Increase the value of the FILES command in the CONFIG.SYS file.

Track 0 bad – disk unusable (MS)

Cause: The FORMAT command found bad sectors on the disk.

Action: Use another disk.



Unable to close connection with remote node (NET TIME)

Cause: You issued the NET TIME command and the remote node serviced your request, but your local node could not close the connection.

Action: Contact your system administrator.

Unable to connect to 'servicename' (TE)

Cause: You entered an invalid or inaccessible network name.

Action: Make sure you entered a valid service name. If the service is not available, try again later.

Unable to contact remote node 'nodename' (NET TIME)

Cause: One of the following occurred:

- You issued the NET TIME command but the remote node 'nodename' was not listening.
- You tried to connect to a server that has no sessions available.
- You tried to connect to a server from a workstation that has a maximum number of sessions running.

Action: Try one of the following:

- Retry the NET TIME command and specify another node name.
- Increase the number of sessions that can connect to the server. Check that there are no active sessions, then restart the server.
- Disconnect from a remote node or server, or increase the number of sessions allowed from your workstation.

Unable to create directory (MS)

Cause: The MS-DOS operating system could not create the directory you specified.

Action: Make sure there are no other directories with the name you specified in the MKDIR command line. Make sure the disk is not full.



Unable to erase 'filename' (BR)

Cause: The BACKUP or RESTORE command could not erase file 'filename'.

Action: Start with a blank, formatted diskette. You can also delete or move some files on the destination diskette before you execute the BACKUP or RESTORE command again.

Unable to make local file name from remote name:

'nodename::filename'

Enter local file name: (NFT)

Cause: You omitted the local file name with the COPY command. NFT was not able to create a local file name from the specified remote file name.

Action: Retry the COPY command and specify a local file name.

Unable to open file: 'filename' (NFT)

Cause: NFT could not open the file you specified.

Action: Make sure you typed the file name correctly.

Unable to send command to remote node 'nodename' (NET TIME)

Cause: You issued the NET TIME command but your local node could not talk to the network.

Action: Contact your system administrator.

Unexpected network error 'errornumber' (NET)

Cause: A network command returned an unexpected error. The parentheses contain the MS-DOS operating system extended error code.

Action: Contact your system administrator.

Unrecognized command in CONFIG.SYS (MS)

Cause: Your CONFIG.SYS file contained an unrecognized command.

Action: Make sure the commands in your CONFIG.SYS file are valid.

Unrecognized command. (SETHOST)

Cause: The command you used was not a valid SETHOST command.

Action: To see all the valid SETHOST commands, type:

SETHOST>SETHOST/HELP

This page intentionally left blank.

Unrecognized error code 'errorcode' (SETHOST)

Cause: The error code you specified was invalid.

Action: Contact your system administrator.

Unrecognized Help option; try typing just /HELP. (SETHOST)

Cause: You specified an invalid SETHOST help option.

Action: To see the valid SETHOST help options, type:

```
SETHOST>SETHOST/HELP 
```

Unrecognized nodespec. (SETHOST)

Cause: The nodespec was invalid.

Action: To see the valid nodespec formats, type:

```
SETHOST>SETHOST/HELP=NODESPEC 
```

Unrecognized Parameter. (SETHOST)

Cause: The parameter you specified was not a SETHOST parameter.

Action: To see the valid SETHOST parameters, type:

```
SETHOST>SETHOST/HELP 
```

**Unrecoverable error in directory
Convert directory to file (Y/N)? (MS)**

Cause: The directory structure is corrupt.

Action: To convert the bad directory to a file, press the Y key. Now you can delete the bad directory. Then use your back-up diskette to restore the directory structure.

If you respond N to this prompt, you may not be able to read from or write to the bad directory.



Use of the /1 switch is not allowed for the target drive (FORMAT)

Cause: You tried to do either of the following:

- Format the hard disk using the /1 switch.
- Format a single-sided diskette in the high-density RX33 drive.

Action: Format a low-density diskette using the /1 switch together with the /4 switch.

Use of the /4 switch is not allowed for the target drive (FORMAT)

Cause: You tried to format the hard disk with the /4 switch. The /4 switch indicates that you want to format an 8- or 9-sector diskette on a high-density RX33 drive.

Action: Retry the FORMAT command without specifying the /4 qualifier.

Use of the /8 switch is not allowed for the target drive (FORMAT)

Cause: You tried to do either of the following:

- Format a hard disk using the /8 switch.
- Format a single-sided diskette in the high-density RX33 drive.

Action: Format a low-density diskette using the /8 switch together with the /4 switch.

Use of the /L switch is only allowed in combination with the /4, /8, or /1 switches (FORMAT)

Cause: You tried to format a disk using the /L switch by itself.

Action: Make sure you specify the /4 switch, the /8 switch, or the /1 switch when you specify the /L switch.

Video shifting is not allowed on this hardware. (MODE)

Cause: You tried to shift the video on your VAXmate workstation.

Action: Do not attempt video shifting on your VAXmate workstation.

Warning – directory full (MS)

Cause: The root directory was too full for RECOVER processing.

Action: Save some files to another diskette, and delete some files. Retry the RECOVER command.

Warning – Read error in EXE file (MS)

Cause: The amount of the file read was less than the size specified in the header. This is only a warning message.

Action: Get your back-up copy of the file. If the source code is yours, reassemble and relink it.

**WARNING, ALL DATA ON NON-REMOVABLE DISK
DRIVE X WILL BE LOST!**

Proceed with Format (Y/N)? (MS)

Cause: This is an informational message that is displayed when you try to format a hard disk.

Action: To save the files, press the N key. Then copy the files to a different disk. Retry the FORMAT command.

To format the hard disk without saving the files, press the Y key.

**Warning: Cannot DELETE both remote and local files.
'Number' file name(s) will be ignored. (NFT)**

Cause: You tried to delete a local file and a remote file at the same time. NFT deleted the file you specified first.

Action: Do not try to delete a local file and a remote file at the same time.

**Warning: Cannot perform DIRECTORY for both local and remote files.
'Number' file name(s) will be ignored. (NFT)**

Cause: You tried to display a directory listing of both local and remote files. NFT displayed the directory you listed first.

Action: Do not try to display a local directory and a remote directory at the same time.



Warning: Cannot print file(s) on local printer. (NFT)

Cause: You included the /PRINT qualifier in a COPY operation from a remote node to a local node. You cannot print remote files on the local printer. (You can print local files on the remote printer.)

Action: Do not try to print remote files on a local printer.

Warning: Cannot TYPE from one file to another. (NFT)

Cause: You included two file specifications with the TYPE command.

Action: Retry the command and specify only one file.

WARNING: Diskette is out of sequence (BR)

Cause: You inserted a diskette that was not the next diskette in the number sequence.

Action: Insert another diskette into the drive.

WARNING: Error reading source diskette

Track 'number' Side 'number' Sector 'number' (DISKCOPY)

Cause: The DISKCOPY program found a bad spot on the source diskette.

Action: Run the COPY command to copy your files to the target diskette.

WARNING: Error writing target diskette

Track 'number' Side 'number' Sector 'number'

Continue copying the diskette (Y/N): (DISKCOPY)

Cause: The DISKCOPY program found a bad spot on the target diskette.

Action: To continue the DISKCOPY operation (skipping this sector), press the Y key.

To stop the DISKCOPY operation, press the N key. Get a new diskette and retry the DISKCOPY command.

**Warning: File(s) will NOT be deleted after copy. (NFT)**

Cause: You included the /DELETE qualifier with the COPY command. The /DELETE qualifier is only valid with the /PRINT qualifier.

Action: Retry the COPY command and include the /PRINT qualifier with the /DELETE qualifier.

Warning: Renaming files with wildcard specifications not supported. (NFT)

Cause: You tried to rename a file with the COPY command and used a wildcard in the input file name and the output file name.

Action: Retry the COPY command and specify explicit file names for the input file and the output file.

**Warning: Service table full
Some sessions may be missing
Press any key to continue (NET)**

Cause: You defined more services than the network terminal services directory can handle.

Action: Use the NET START LAT command with the /D:size qualifier to increase the number of services you can have in the network terminal services directory. The size you specify on the /D: qualifier is added to the default size of 10. For example, to create a network services directory that can contain up to 15 services, the qualifier is /D:5. Each additional entry over the default consumes an extra 47 bytes of memory.

Write fault error writing drive 'drivename' (MS)

Cause: The MS-DOS operating system could not write to the drive.

Action: Check to see if the diskette has a write-protect tab on it. If it does, remove the tab and press the R key to retry the command.

If this message is displayed again, press the A key to stop the command.



Write protect error writing drive 'drivename' (MS)

Cause: The diskette has a write-protect tab on it.

Action: Remove the write-protect tab and retry the command.

Write protected disk in drive 'drivename' (WIN)

Cause: The disk in the specified drive was write-protected.

Action: Remove the write-protect tab and select Retry. Otherwise, select Cancel.

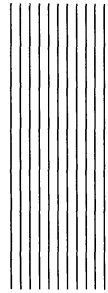
(.)(..) does not exist (MS)

Cause: Either the . or the .. directory entry was invalid.

Action: save as many files as you can using the BACKUP command. Use another disk and restore as many files as you can.

Appendix G

International Features



This appendix discusses:

- International country codes
- International character set codes
- Country keyboard abbreviations
- Commands providing international support
- How support files work together
- Character sets
- Country keyboards

International Country Codes

The following list contains international country codes.

001	United States	002	Canada
031	Netherlands	032	Belgium
033	France	034	Spain
039	Italy	041	Switzerland
044	United Kingdom	045	Denmark
046	Sweden	047	Norway
049	Germany	061	Australia
358	Finland	972	Israel



International Character Set Codes

The following list contains international character set codes.

CA7	Canadian 7-bit NRC	CH7	Swiss 7-bit NRC
DE7	German 7-bit NRC	DK7	Danish 7-bit NRC
ES7	Spanish 7-bit NRC	FI7	Finnish 7-bit NRC
FR7	French 7-bit NRC	ISO	ISO Multinational
IT7	Italian 7-bit NRC	MCS	DIGITAL Multinational
NO7	Norwegian 7-bit NRC	SE7	Swedish 7-bit NRC
ST2	IBM Norway/Denmark Extended	STD	IBM Extended
UK7	United Kingdom 7-bit NRC		

Country Keyboard Abbreviations

The following list contains country keyboard abbreviations.

CA	Canadian	CH	Swiss
DE	German	DK	Danish
ES	Spanish	FI	Finnish
FR	French	IT	Italian
NO	Norwegian	SD	Swiss (German)
SE	Swedish	SF	Swiss (French)
UK	English	US	American English



Commands Providing International Support

Table G-1 contains the commands providing international support.

Table G-1 International Support

Command	What It Does
FONT	Loads a text character set. FONT files have a .FNT file extension.
GRAFTABL	Loads a graphic character set. GRAFTABL files have a .GRF file extension.
KEYB	Loads a keyboard map file. KEYB files have a .KEY file extension.
LCOUNTRY	Loads country-specific information and case conversion information into the MS-DOS operating system. LCOUNTRY files have a .COU file extension.
SELECT	Provides the coordination of the various pieces of internationalization.
SORT	Is an MS-DOS operating system filter that sorts characters according to current character set. SORT files have a .SRT file extension.

The FONT Command

Use the FONT command to load a text font file that corresponds to a character set. The FONT command loads the bit maps of the ASCII characters. Each text character is represented by 16 bytes of data.

The GRAFTABL Command

Use the GRAFTABL command to load the bit maps of the graphics characters that are displayed when the workstation is in a graphics mode. All workstation graphics modes are supported.

Each graphics character is represented by 8 bytes of data.

The KEYB Command

Use the KEYB command to load keyboard map files. Two factors determine which keyboard map file should be loaded; the country selected and the character set selected. For example, if you want to use an MCS character set in the United Kingdom, you would load the MCSUK.KEY file.



The LCOUNTRY Command

Use the LCOUNTRY command to load country-specific information into the MS-DOS operating system.

The SELECT Command

Use the SELECT command to change the CONFIG.SYS and AUTOEXEC.BAT files to the desired character set and country information. The SELECT command sets up the parameters for FONT, KEYB, and LCOUNTRY.

After setting these parameters using the SELECT command, and restarting the MS-DOS operating system, the correct character set and country information is installed.

It is your responsibility to ensure compatibility among the international components.

SELECT accepts user input on the command line.

The SORT Command

The SORT command is an MS-DOS operating system filter that collates characters according to a given sort table. Each character set has its own sort file.

Similarities Between FONT, GRAFTABL, KEYB, LCOUNTRY, SORT

Each command accepts user-created files. For example, you can create a set of PACMAN graphic fonts to be loaded by GRAFTABL.

You can load any combination of files, but you must ensure compatibility yourself. For example, you could load an ISO font set, be running a STDFR keyboard, and using DE7 country-specific information. We do not recommend it, but we do not prohibit it, either.

Each command has an option so that you can load the default set.

GRAFTABL, SORT, or LCOUNTRY typed with no arguments match the current .FNT file. For example, if you load ISO.FNT and type the following command lines, GRAFTABL loads ISO.GRF and LCOUNTRY loads ISO.COU:

```
A:\>GRAFTABL 
```

```
A:\>LCOUNTRY 
```



Each command searches the current directory, any appended directories, the root directory, and then the current path for the specified file.

Each command assumes a default file extension if you do not specify it. Table G-2 lists examples of what you type and what is loaded.

Table G-2 Examples of International Commands

What You Type	What Is Loaded
FONT ISO <input type="button" value="Return"/>	ISO.FNT
GRAFTABL ISO <input type="button" value="Return"/>	ISO.GRF
KEYB ISOUS <input type="button" value="Return"/>	ISOUS.KEY
LCOUNTRY ISO <input type="button" value="Return"/>	ISO.COU

The KEYB and FONT utilities allow you to return to the default ROM-BIOS tables using the /D qualifier after the command. The KEYB and FONT utilities allow you to see the current character sets using the /S qualifier after the command.

Changing Character Sets for a Specific Country

If a French user wants to use the ISO Latin-1 character set, the sequence of commands shown in Table G-3 is typed.

Table G-3 Changing Character Sets

What You Type	What Is Loaded
A:\>FONT ISO.FNT <input type="button" value="Return"/>	Loads the ISO Latin-1 text character set
A:\>KEYB ISOFR.KEY <input type="button" value="Return"/>	Loads the French ISO Latin-1 keyboard map tables
A:\>LCOUNTRY ISO.COU 033 <input type="button" value="Return"/>	Loads the ISO Latin-1 character set country data and specifies the country as France



If the user also wants to use graphics video mode, the following command needs to be given:

```
A:\>GRAFTABL ISO.GRF 
```

The ISO Latin-1 graphics character set is loaded.

NOTE

Specifying the file extensions for each of these files is optional. The extensions are assumed by default.

How Support Files Work Together

Tables G-4 through G-8 show how all the utilities work together to give you full support for the desired character set and country. Use these tables only as a guideline.

Table G-4 IBM Extended Character Set

Language	Keyboard	Font (Text)	Graphics (Font)	Sort
U.S.*	STDUS.KEY *	STD.FNT *	STD.GRF *	STD.SRT *
U.K.	STDUK.KEY			
FRENCH	STDFR.KEY			
GERMAN	STDDE.KEY			

* Default set up at start-up time

**Table G-5 Digital Multinational Character Set**

Language	Keyboard	Font (Text)	Graphics (Font)	Sort
U.S.	MCSUS.KEY	MCS.FNT	MCS.GRF	MCS.SRT
U.K.	MCSUK.KEY			
FRENCH	MCSFR.KEY			
GERMAN	MCSDE.KEY			

Table G-6 French 7-Bit National Replacement Character Set

Language	Keyboard	Font (Text)	Graphics (Font)	Sort
7-BIT FRENCH	FR7FR.KEY	FR7.FNT	FR7.GRF	FR7.SRT

Table G-7 German 7-Bit National Replacement Character Set

Language	Keyboard	Font (Text)	Graphics (Font)	Sort
7-BIT GERMAN	DE7DE.KEY	DE7.FNT	DE7.GRF	DE7.SRT

Table G-8 International Standards Organization

Language	Keyboard	Font (Text)	Graphics (Font)	Sort
U.S.	ISOUS.KEY	ISO.FNT	ISO.GRF	ISO.SRT
U.K.	ISOUK.KEY			
FRENCH	ISOFR.KEY			
GERMAN	ISODE.KEY			



Character Sets

Using All Character Sets With MS-DOS and MS-Windows

You should not create file names using accented characters or other 8-bit characters. Instead, use only characters from the ASCII character set (A-Z, 0-9). The accented characters and their positions in the set differ from character set to character set. Using them in file names could result in different file names being displayed under different character sets.

MS-DOS supplies the MCS/ISO and NRC character sets. If a file is created using the MCS/ISO character set, it could look different if viewed with the NRC set loaded. Ensure that the loaded character set matches the one that was used to create the file.

Using Character Sets With MS-Windows

MS-Windows uses ANSI (ISO Latin-1) a universal, standard character set. This 8-bit character set allows you to represent up to 256 characters (0-255). This character set is split into:

- 0-127
- 128-255

The first half (0-127) is standard U.S. ASCII. Characters from 128-255 may differ from one character set to another. The differences are special characters, such as accents and currency symbols.

You probably have documents containing non-ANSI characters if you are using:

- A workstation in a non-English speaking country
- Documents not created in MS-Windows

These files will display differently if you use them under MS-Windows.

The MS-Windows stroke fonts (ROMAN, SCRIPT, and MODERN) do not fully support the ISO Latin-1 character set.

Using the NRC Character Set With MS-DOS

The NRC character set does not contain the backslash (\) or the vertical bar (|). To generate these characters, use the following procedures. When you type the numbers, use the numeric keypad.



To generate the backslash, type:

<Alt/92>

To generate the vertical bar, type:

<Alt/124>

The MS-DOS operating system interprets these generated characters as the backslash or the vertical bar.

Using Character Sets With the VT220 and VT240 Terminal Emulators

The ISO Latin-1 dead-diacritical keys are used with MS-Windows. The VT220 terminal emulator, which runs as an MS-Windows application, also uses the ISO Latin-1 dead-diacritical keys, regardless of the current mode of the terminal emulator (MCS/ISO or NRC).

The VT240 terminal emulator uses the same dead-diacritical keys used under the MS-DOS operating system, regardless of the current terminal emulator mode (MCS/ISO or NRC).



Country Keyboards

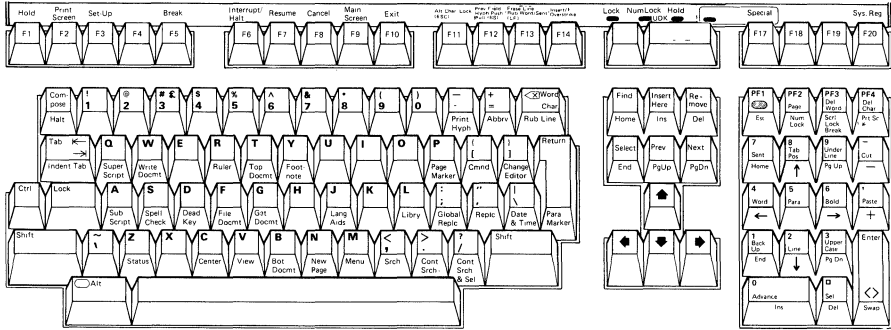


Figure G-1 U. S./U. K. Keyboard

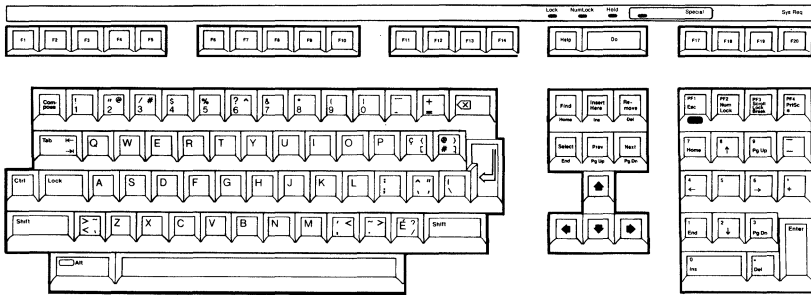


Figure G-2 Canadian/English Keyboard

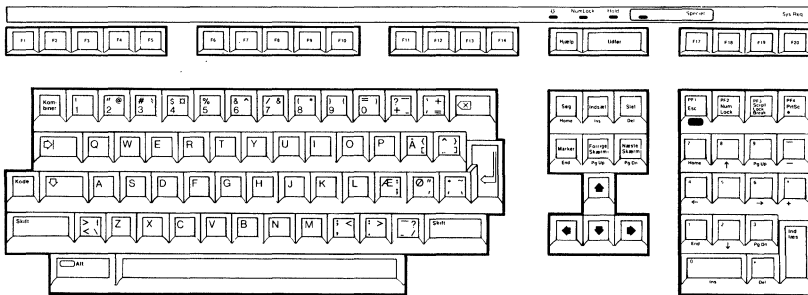


Figure G-3 Danish Keyboard

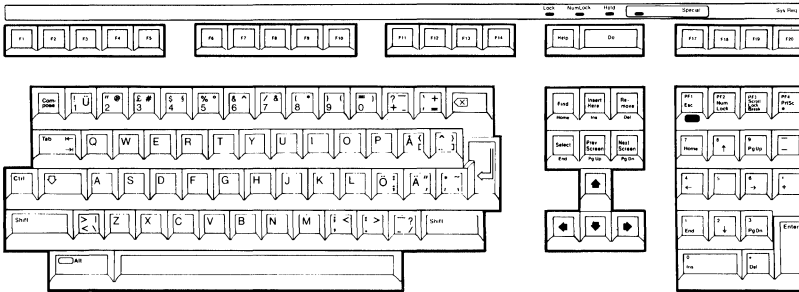


Figure G-4 Finnish Keyboard

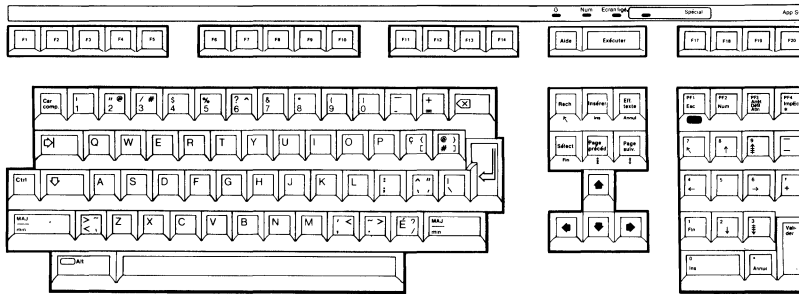


Figure G-5 French/Canadian Keyboard

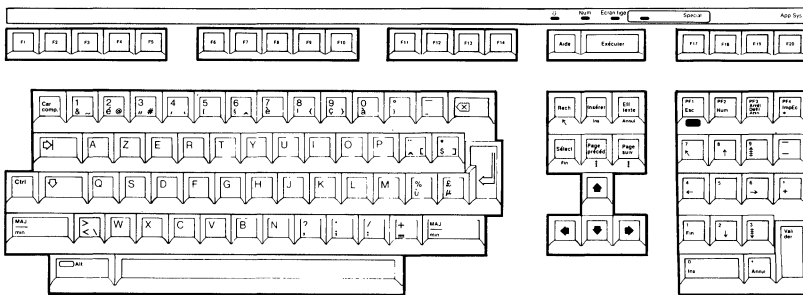


Figure G-6 French Keyboard

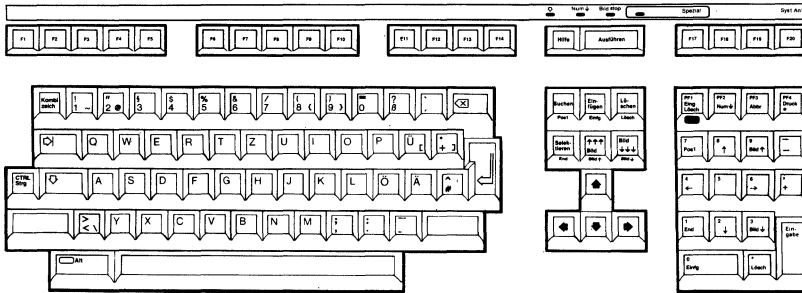


Figure G-7 German/Austrian Keyboard

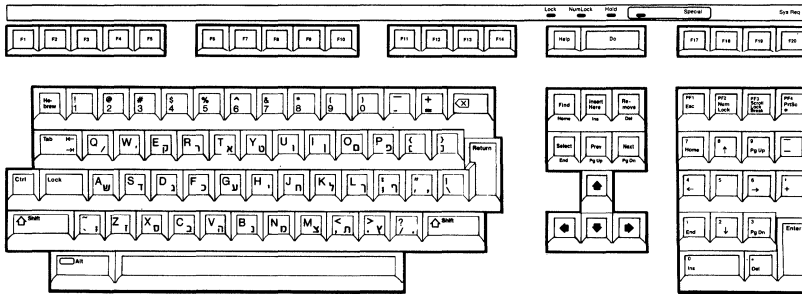


Figure G-8 Hebrew Keyboard

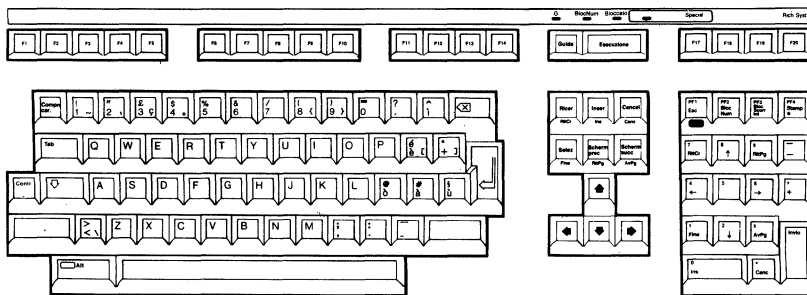


Figure G-9 Italian Keyboard

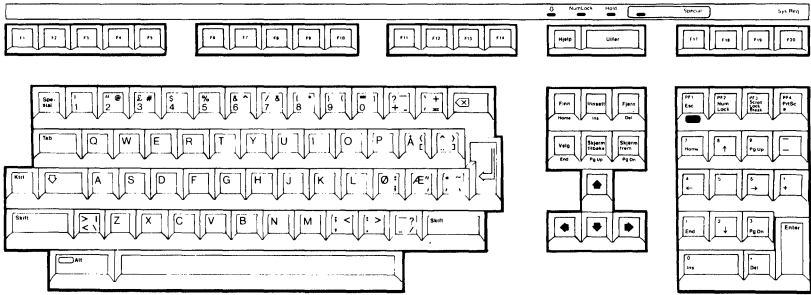


Figure G-10 Norwegian Keyboard

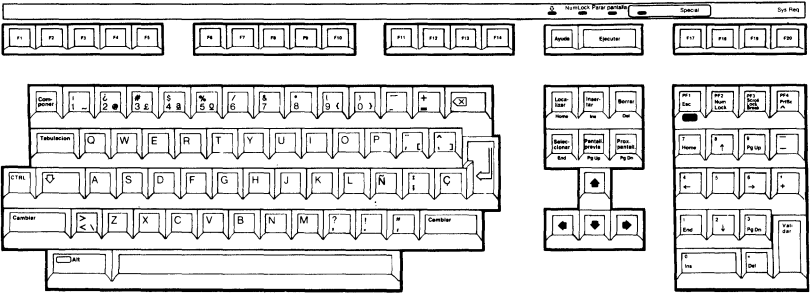


Figure G-11 Spanish Keyboard

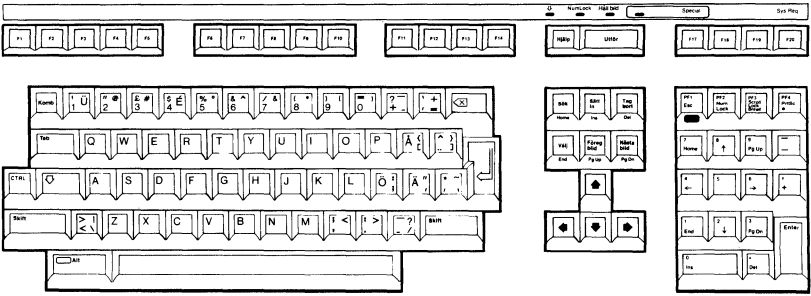


Figure G-12 Swedish Keyboard

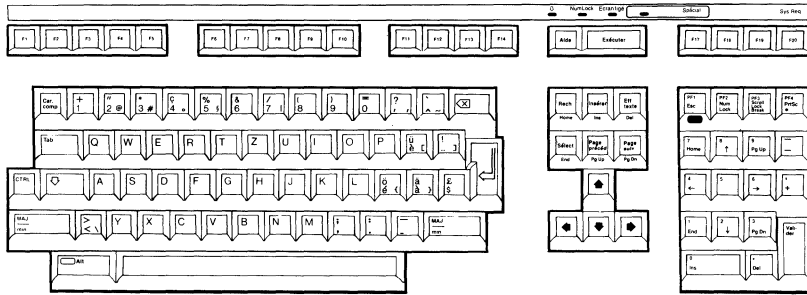


Figure G-13 Swiss/French Keyboard

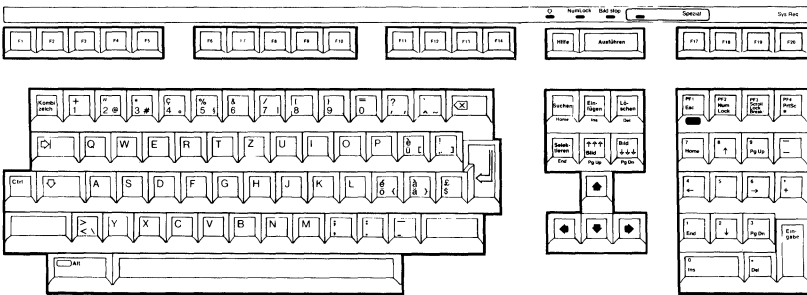
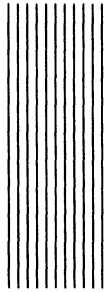


Figure G-14 Swiss/German Keyboard

Appendix H

Using Diskettes on the VAXmate Workstation



This appendix discusses:

- Using diskettes
- Formatting diskettes
- Diskette Read/Write Compatibility
- DISKCOPY and Diskette Types

Using Diskettes

You can use either high-density or standard low-density diskettes on the workstation. If you use high-density diskettes, you cannot exchange data with an IBM PC, IBM PC/XT, or a Rainbow computer, because they do not support high-density diskettes.

Formatting Diskettes

The MS-DOS operating system enables you to format the following diskette types in the VAXmate 5¹/₄ inch high-capacity drive:

- Industry standard low-density diskettes:
 - Single sided, 8-sectors per track, 40 tracks, 160K bytes
FORMAT A: /1/8/4
 - Single sided, 9-sectors per track, 40 tracks, 180K bytes
FORMAT A: /1/4



Using Diskettes on the VAXmate Workstation

- Double sided, 8-sectors per track, 40 tracks, 320K bytes
FORMAT A: /4/8
- Double sided, 9-sectors per track, 40 tracks, 360K bytes
FORMAT A: /4
- VAXmate high-density diskettes:
 - The default and recommended format is double sided, 15-sectors per track, 80 tracks, 1.2 megabytes
FORMAT A:

IMPORTANT

Do not attempt to format a low-density diskette at 15-sectors per track. If you do, you cannot use the diskette until you bulk erase it.

Do not attempt to reformat a 15-sector per track diskette at 8- or 9-sectors per track, unless you first bulk erase the diskette.

Magnetic interference between the previous high-density format and the new low-density format causes a high degree of unreliability.

Diskette Read/Write Compatibility

The MS-DOS operating system enables you to read from and write to the following diskette types in the VAXmate 5¹/₄ inch high-capacity drive:

- Rainbow diskettes (preformatted on a Rainbow computer)
 - Single sided, 10-sectors per track, 80 tracks, 395K bytes
- Industry standard diskettes
 - Single sided, 8 sectors per track, 40 tracks, 160K bytes
 - Single sided, 9 sectors per track, 40 tracks, 180K bytes
 - Double sided, 8 sectors per track, 40 tracks, 320K bytes
 - Double sided, 9 sectors per track, 40 tracks, 360K bytes
- VAXmate high-density diskettes
 - Double sided, 15-sectors per track, 80 tracks, 1.2 megabytes



IMPORTANT

If you write to any Rainbow diskettes, or to any single or double sided industry standard diskettes using the VAXmate's high-capacity drive, you may not be able to read the diskette in a low-capacity drive.

You cannot use high-density diskettes in low-capacity single or double sided drives.

DISKCOPY and Diskette Types

The DISKCOPY command enables you to copy the contents of a diskette to another diskette. All diskette types previously mentioned can be copied using the DISKCOPY command. MS-DOS and other operating system diskettes can be copied. The destination diskette must be preformatted to the same type as the source diskette, except for the high-density VAXmate 1.2 megabyte diskette. The DISKCOPY command formats the high-density VAXmate 1.2 megabyte destination diskette if it hasn't already been done.

Appendix I

How to Configure Your System



This chapter discusses:

- What a configuration file is
- How to change a configuration file
- Configuration commands

What Is a CONFIG.SYS File?

When you start the MS-DOS operating system, there are installation-specific settings that need to be configured. For example, if you want to install a memory drive, you would configure this when you start the MS-DOS operating system.

The configuration file, named CONFIG.SYS, contains CONFIG.SYS commands which the MS-DOS operating system reads at startup. The MS-DOS operating system searches for the CONFIG.SYS file in the root directory of the startup drive.

The CONFIG.SYS file helps you configure your system with a minimum of effort. You add device drivers to your system by adding commands to the CONFIG.SYS file. You can only add device drivers to your system at startup. In order for the new values to take effect, you must restart your workstation.



Creating the CONFIG.SYS File

If there is not a CONFIG.SYS file on the MS-DOS disk, you can use the COPY command to create one. For example, to create a CONFIG.SYS file, type:

```
A:\>COPY CON CONFIG.SYS   
BUFFERS=10   
FILES=10   
DEVICE=\BIN\NETWORK.SYS   
BREAK=ON   
SHELL=A:\BIN\COMMAND.COM A:\BIN /P   
LASTDRIVE=P  
```

After you press the Return key, a file named CONFIG.SYS is saved on the MS-DOS operating system disk in your root directory.

CONFIG.SYS Commands

Table I-1 lists the CONFIG.SYS commands.

Table I-1 CONFIG.SYS Commands

Command	Use
BREAK	Sets Ctrl/C check.
BUFFERS	Sets the number of disk buffers.
COUNTRY	Sets the international time, date, and currency.
DEVICE	Installs the device driver into the system.
FCBS	Specifies the number of FCBS that can be concurrently open.
FILES	Sets the number of open files that can access certain MS-DOS system calls.
LASTDRIVE	Sets the maximum number of drives that you can access.
SHELL	Begins execution of the shell from a specific file.

These commands are described in detail on the following pages.



BREAK

Purpose

The **BREAK** command sets the Ctrl/C check.

Format

BREAK=[ON | OFF]

Where:

- ON** Sets the Ctrl/C check. Other functions, such as MS-DOS INT 21H calls, check for Ctrl/C.
- OFF** Clears the Ctrl/C check. Other functions, such as MS-DOS INT 21H calls, do not check for Ctrl/C.

Comments

Depending on the program you are running, Ctrl/C can be used to stop an activity (for example, to stop sorting a file). Normally, the MS-DOS operating system checks to see if you pressed Ctrl/C while it is reading from the keyboard, writing to the screen, or writing to a printer.

NOTE

You cannot press Ctrl/C to stop program execution on a server.

Example

To set **BREAK** to off, add the following command to your CONFIG.SYS file:

```
BREAK=OFF
```



BUFFERS

Purpose

The **BUFFERS** command sets the number of disk buffers that the MS-DOS operating system allocates in memory when you start the system.

Format

BUFFERS=X

Where:

X Is the number of buffers. The default is eight buffers. **X** can be any number from 1 to 99.

Comments

A disk buffer is a block of memory where the MS-DOS operating system can hold data being read from or written to a disk when the amount of data is not an exact multiple of sector size.

For application programs such as word processors, a number between 10 and 20 provides the best performance. If you plan to create many subdirectories, increase the buffers value to between 20 and 30.

Example

To specify 10 buffers, add the following command to your **CONFIG.SYS** file:

```
BUFFERS=10
```



COUNTRY

Purpose

The COUNTRY command sets the international time, date, currency, and case conversion formats.

Format

COUNTRY=X

Where:

X Is the international country code. Valid country codes are:

001	United States	002	Canada
031	Netherlands	032	Belgium
033	France	034	Spain
039	Italy	041	Switzerland
044	United Kingdom	045	Denmark
046	Sweden	047	Norway
049	Germany	061	Australia
358	Finland	972	Israel

Comments

The default country is US.

Example

To set the French currency, time, date, and case conversion, add the following command to your CONFIG.SYS file:

```
COUNTRY=033
```



DEVICE

Purpose

The **DEVICE** command installs the device driver in the specified path name to the system list.

Format

DEVICE=filename.ext

Where:

filename.ext Is the drive, path, file name and file extension of the device driver.

Example

To load the ANSI device driver in the directory **C:\VXSYS**, add the following command to your **CONFIG.SYS** file:

```
DEVICE=C:\VXSYS\ANSI.SYS
```

This command causes the MS-DOS operating system to replace all keyboard input and screen output support with the ANSI escape sequences.



FCBS

Purpose

The FCBS command sets the number of FCBs (File Control Blocks) that can be open simultaneously.

Format

FCBS=X,Y

Where:

- X Is the number of files, opened by FCBs, that can be opened simultaneously. The default is four. X can be from 1 to 255.
- Y Is the number of files, opened by FCBs, that the MS-DOS operating system cannot close automatically if an application tries to open more than X files by FCBs. The first Y files opened by FCBs are protected from being closed. The default value is zero. Allowed values are from 1 to 255.

Example

To allow four simultaneously opened files and to protect the first two from being automatically closed by the MS-DOS operating system, add the following command to your CONFIG.SYS file:

FCBS=4,2



FILES

Purpose

The FILES command sets the maximum number of simultaneously open files that MS-DOS system calls can access.

Format

FILES=X

Where:

X Is the number of open files that system calls can access. The default is eight. X can be any number from 5 to 255.

Example

To specify that MS-DOS system calls can access 16 open file, add the following command to your CONFIG.SYS file:

FILES=16



LASTDRIVE

Purpose

The LASTDRIVE command sets what the last drive can be.

Format

LASTDRIVE=X

Where:

X Is a letter (A through Z) that represents the last valid drive that the MS-DOS operating system accepts. The default value is E. The minimum number is equal to the number of drives you have installed on your computer plus the number of network drives you plan to use.

Comments

This command is primarily used in a network environment. At start up, the MS-DOS operating system recognizes five drive letters (A through E), no matter how many physical drives you have on your system. A network redirection must occur to make any of the extra drives defined by LASTDRIVE valid.

Example

To set the last valid drive to drive M, add the following command to your CONFIG.SYS file:

```
LASTDRIVE=M
```




SHELL

Purpose

This command begins execution of the shell (top-level command processor) from a file defined by the specified path name.

Format

`SHELL=filename.ext [drv2:][\path2\] /P [/D][/C][/E:n]`

Where:

- `filename.ext` Is the drive, path, file name and file extension of the new command processor.
- `drv2:` Is the drive where the new command processor can find its non-resident overlay. The value for the COMSPEC command is also set.
- `path2` Is the path to the directory where the new command processor can find its non-resident overlay.
- `/P` Is required for the COMMAND.COM file to properly start up.
- `/D` If specified, indicates that the AUTOEXEC.BAT file should not be executed.
- `/C` If specified, indicates that the remaining command line should be treated as the initial command and arguments.
- `/E:n` If specified, means make the initial environment “n” paragraphs. The size equals $n \times 16$ bytes. The default is 8 (128 bytes).

Comments

This command should be used by system programmers who write their own command processor (the MS-DOS operating system file named COMMAND.COM). The MS-DOS operating system starts the processor specified in `drv1:\path1` instead of reading the standard COMMAND.COM.

Example

```
SHELL=\BIN\NEWSHELL
```



Sample CONFIG.SYS File

If you have a key diskette, your configuration file should look like this:

```
BUFFERS=30 (8 if you do not have an expansion box)
FILES=16
LASTDRIVE=N
DEVICE=\DOS\MDRIVE.SYS /E*
```

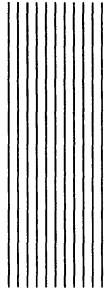
The **BUFFERS=30** command sets the number of disk buffers available for a hard disk system. The number would be 8 for a system without an expansion box.

The **FILES=16** command sets the number of simultaneously open files that the MS-DOS system calls can access.

The **LASTDRIVE=N** command sets what the last drive can be.

The **DEVICE=\DOS\MDRIVE.SYS /E*** command installs a memory drive in extended memory. This memory drive uses all of the available extended memory.

Appendix J *VAXmate Options*



Additional Memory

The system comes with 1 Mbyte of memory. Memory capacity can be increased by installing a 2 Mbyte memory option module. The additional memory is useful when running applications that are capable of using additional memory.

The 2 Mbyte memory option module is a customer installable daughter card which attaches to the CPU module.

Integral Modem (North America)

An integral modem option is available that allows the user and/or program to establish and maintain asynchronous and synchronous communications with other computer systems using the general switched telephone network (GSTN) in countries where the VAXmate is sold. The integral modem is customer installable within the VAXmate base system and connects directly to the telephone network.

Because the VAXmate is intended for use in a networked environment, this option is primarily used in remote office locations to gain access to the host computer systems at headquarter locations.

This modem also reduces clutter on the desk, allowing the customer to have a one vendor, one box desktop for the first time.



Printers

There are two printers available for the VAXmate:

- LA75 An impact dot matrix printer that is compact, low cost, and suitable for general business applications, including limited word processing in a small to medium computer environment.

- LN03 Plus A tabletop, nonimpact page laser printer, uses laser imaging and xerographic printing techniques, and prints letter quality images at a rate of eight pages per minute.

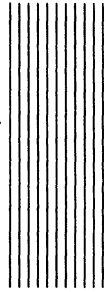
80287 Math Coprocessor

The VAXmate accepts an optional 80287 numeric data coprocessor for floating point operations and increased graphics performance. It operates at 5.33 Mhz. This option is a 40 pin DIP integrated chip that is non-customer installable.

Expansion Box with Hard Disk

The RCD31 expansion box includes a controller that supports a 20 Mbyte hard disk drive and two option slots for industry standard modules.

Appendix K *Vaxmate Workstation* *Specifications*



VAXmate Workstation

The VAXmate workstation consists of a base system unit that includes a CPU, I/O video module, power supply and diskette drive; a keyboard, and a mouse.

System Unit

Physical Dimensions

Height	28.57 cm (11.25 in) (at highest point)
Width	40.64 cm (16 in) (at widest point)
Depth	38.1 cm (15 in)
Footprint	609.6 cm (240 sq in)
Weight	15 kg (35 lbs)

CPU

Processor	80286 processor
Memory	1 Mbyte RAM



Power Supply

Type	100 KHz
AC input (120 V or 220 V)	
120 V (nominal)	90 to 128 Vrms
220 V (nominal)	180 to 256 Vrms
Line current	
120 V (nominal)	2.7 nominal
220 V (nominal)	1.8 nominal
AC power consumption	312 nominal
Regulated voltages	+5.1, +12.1, -12, +28 and -9 Vdc
Unregulated voltages	300 Vdc
Circuit protection	fuse
Over-temperature protection	

Environment - Class A

Ambient operating temperature	15°C (59°F) to 32°C (90°F)
Relative humidity	8% to 80%
Maximum wet bulb (non-condensing)	25°C (77°F)
Altitude (maximum)	
Operating	up to 8,000 feet
Non-operating	up to 30,000 feet



Workstation System Expansion

Additional memory	2 Mbytes customer-installable daughter card
Math coprocessor	80287 numeric data coprocessor for floating point operations
Expansion box	20 Mbyte hard disk drive and two industry standard option slots
Integral modem (North America)	Hayes* compatible 300/1200/2400 baud

I/O Video Module

Video Display	35.5 cm (14-in), 13-inch viewable, diagonal amber or green phosphor color
Active display size	240 mm horizontal by 150 mm vertical
Text display	
Soft font (loadable)	256 characters
Soft font (matrix)	8 pixels horizontal by 16 pixels vertical
Scan rates	26.4 kHz horizontal, 60 Hz vertical, non-interlaced
Video input	4-bit TTL, 16 intensity levels
Display formats	640 pixels horizontal by 400 pixels vertical, 800 pixels horizontal by 250 pixels vertical
CGA-compatible modes	80 column × 25 row text 40 column × 25 row text 640 × 200 × 2 color bitmapped graphics 320 × 200 × 4 color bitmapped graphics
Additional modes	640 × 400 × 2 color bitmapped graphics 640 × 400 × 4 color bitmapped graphics 800 × 250 × 4 color bitmapped graphics 320 × 200 × 16 color bitmapped graphics

* Hayes is a trademark of Hayes Microcomputer Products Inc.



5¹/₄-Inch Flexible Disk Drive

Reads/Writes	1.2 Mbytes IBM PC-AT diskettes
Reads/Writes	0.4 Mbytes Digital RX50 diskettes
Reads	0.36 Mbytes IBM PC-XT diskettes

Keyboard

Physical Description (Low-profile, Detachable)

Height	5 cm (2 in) at highest point
Length	53.3 cm (21 in)
Width	17.1 cm (6.75 in)
Weight	2 kg (4.5 lb)
Audio and visual indicators	4 lights and bell tone generator
Cord	1.9 m (6 ft) coiled cord; 6 pin, telephone-type modular connector on keyboard end; 6 pin, shielded connector on workstation end; plugs into right side of workstation
Keypad	Sculptured key array
Home row key height	3 cm (1.2 in) above desktop
Power	+5 V \pm 5% @ 275 mA, 1.4 W maximum

Mouse

Physical Description

Size	8.8 cm (3.5 in) diameter, 4.0 cm (1.6 in) high
Weight	170 grams (6 oz) including cable
Switches	Three tactile feel switches actuating force 0.8 newtons (3 oz) \pm 25%



Cable	1.5 m (5 ft) round .375 cm (0.15 in) diameter, six conductor #26 stranded shielded high flexibility design
Connector	7 pin micro-DIN type (male)

Electrical specifications

Power	+5 volts \pm 5 % at 130 mA, -8 to -13 volts at 20 mA (RS-232 mode)
Interface	Digital ThinWire
Ethernet Port	Includes a T-connector, terminator, and 12 ft cable
Serial Communications Port	Includes a modem control
Serial Printer Port	6-pin modular jack

Appendix L

MS-DOS and VAX/VMS

File Compatibility



The MS-DOS operating system and the VAX/VMS operating system have different file systems. While both have directory structures rooted on disk drives, their file-naming syntax is different. The following sections contain information you need to know if you are sharing files and directories between the MS-DOS and the VAX/VMS operating systems.

Naming Files and Subdirectories

When using the MS-DOS operating system, you cannot create a file name with a null file extension if a subdirectory with the same file name already exists. For example, you cannot create a file called BOX. if a subdirectory called BOX <DIR> already exists.

When using the VAX/VMS operating system, you cannot create a subdirectory if an existing file in the directory has the same file name as the subdirectory and a .DIR extension. For example, if the file NAME.DIR exists in a directory, you cannot create a subdirectory called NAME in that directory.

When using the VAX/VMS operating system, you cannot create a file with the .DIR extension if a subdirectory with the same name already exists. For example, if the directory NAME exists, you cannot create a file called NAME.DIR.

Creating Files with Text Editors

Certain MS-DOS text editors end a .TXT file with Ctrl/Z as a delimiter. If you create such a file on your workstation with an MS-DOS text editor and want to use the file as a .COM file in the VAX/VMS environment, you must first insert a "\$ EXIT" as the last line of the .COM file, or edit the file on the VMS system and remove the Ctrl/Z.



If you use a VMS text editor to create a file that is to be used later in the MS-DOS environment, you must copy the file, using the /A qualifier, from the drive connected to the VAX/VMS server to any other drive. Copying the file removes any appended Ctrl/Z characters. Certain MS-DOS application programs terminate abnormally when they encounter a Ctrl/Z character.

Special Characters in File Names

Of the 11 characters you could specify in an MS-DOS file name and file extension, do not specify more than nine special characters when creating a subdirectory. Special characters are any valid MS-DOS file name characters other than A-Z, 0-9, \$, and _ .

The VAX/VMS server translates MS-DOS directory names with file extensions by treating the “.” as a special character and appending .DIR as the file extension. For example, if a workstation user creates an MS-DOS directory named A.EXT, the directory is listed as A.EXT. However, the VAX/VMS lists the directory as A__2EEXT.DIR.

Copy Binary Files Between MS-DOS and VAX/VMS Directories

You can copy MS-DOS binary files to a VAX/VMS directory. To copy binary files between the MS-DOS and VAX/VMS environments, use the MS-DOS COPY command.

Any binary files that were not copied to your VAX/VMS directory with the MS-DOS COPY command should be copied to the MS-DOS environment with the NFT COPY command.

Using MS-DOS Applications With VMS-Created Files

Some MS-DOS applications (for example, EDLIN) do not work with a file created by a VMS process because the VAX/VMS server does not allow write access to those files. It does allow write access to VAX/VMS files with the stream record format, but supports only read access to files with any other record format. To determine the record format of a file created by a VMS process, use the DIR/FULL command at the VAX/VMS operating system prompt. For example:

```
$ DIR/FULL filename 
```



Table L-1 describes the VAX/VMS server support for MS-DOS access to VAX/VMS files.

Table L-1 MS-DOS Access to VAX/VMS Files

If VAX/VMS file's record format is ...	MS-DOS allows you to ...
Stream	Open Close Create Read Write/Append Delete
Sequential record	Open Read (sequential only)
Relative record	Open Read (sequential only)
Indexed record	Open Read (sequential only)

The VAX/VMS server supports only read access to ordinary RMS record files (nonstream files).

To convert a nonstream file to a stream file, copy the file to another file name. For example, to convert the nonstream file A.DAT to a stream file named B.DAT, at the MS-DOS operating system prompt, type:

```
A:\>COPY A.DAT B.DAT 
```

Read-Only Directories

Directories marked as read-only on the VAXmate server are ordinary MS-DOS directories. You can create files in the directory and remove directories when they are empty. Directories marked as read-only on the VAX/VMS server cannot be deleted by an MS-DOS process. Also, you cannot delete files from or create files in that directory.

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