PCSA

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MS-Windows User's Guide

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Preface

The Personal Computing Systems Architecture (PCSA) is an extension of DIGITAL's system's and networking architecture that merges VMS and MS-DOS environments. The PCSA can include VAX, MicroVAX, and VAXmate servers running VAXmate Services for MS-DOS and PCSA Client software. It can also include the DECnet/PCSA Client software that runs on PC workstations and on VAXmate workstations. Other PCSA products include ThinWire Ethernet products, and other peripherals, such as the LN03 Plus and LA75 Companion printers.

DIGITAL's PCSA network fully integrates all the elements of personal and corporate computing required for direct information access and sharing. Thus, it has computing and communicating capabilities substantially better than those of conventional PC local area networks (LANs).

Guide Objectives

The *MS-Windows User's Guide* explains how to use the following system software:

- MS-Windows
- VT220 terminal emulator with scripting
- Desktop applications
- MS-Paint

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

Intended Reader

This guide is intended for new or experienced MS-Windows users. Before reading this guide, however, you must first read the workstation handbook that comes with your workstation. Besides describing some of the terminology used in this guide, the workstation handbook tells you how to set up your workstation and use:

- Your key diskette
- MS-Windows
- The mouse
- The Information System

NOTE

Standalone workstation users must also read the *VAXmate Standalone Guide*.

Your system software includes an Information System. This information, found on-line, is similar to the information found in this guide. It differs only in that it is presented in a different format.

The Information System is always available to you as an icon when you are using MS-Windows on your workstation. This means you can use it as a learning aid while you are becoming familiar with MS-Windows and the rest of the system software.

Both the workstation handbooks and the MS-Windows part of this guide explain how to start the Information System.

Guide Organization

This guide contains these chapters and appendixes:

Chapter 1	Contains information about starting MS-Windows, running an application, using the Information System, scrolling a window, using menus and commands, using dialog boxes, and finishing an application.
Chapter 2	Contains information about running multiple applications, switching between windows, sizing windows, shrinking an application to an icon, sharing information, and receiving messages from another application.
Chapter 3	Contains information about using the MS-DOS Executive window, its menus and commands, using MS-DOS commands in MS-Windows, and how to finish an MS-Windows session.
Chapter 4	Contains information about selecting, copying, deleting, printing, renaming, and getting information about files.
Chapter 5	Contains information about working with directories and disks.
Chapter 6	Contains information about using a keyboard to perform tasks in MS-Windows.
Chapter 7	Contains information about running standard and special applications both inside and outside of MS-Windows, and about transferring information between standard applications.
Chapter 8	Contains information about the MS-Windows Control Panel to change features or characteristics.
Chapter 9	Contains information about starting the VT220 terminal emulation application and the MS-Windows features it uses. It also describes how to leave the VT220 emulator application.
Chapter 10	Contains information about using a keyboard with the VT220 terminal emulation application.
Chapter 11	Contains information about using the VT220 terminal emulation application Set-Up utility and the VT220 Set-Up screens and selections.

Chapter 12	Contains information about using VT220 configuration files, saving and recalling VT220 Set-Up selections, autotyping characters to a host, and receiving characters from a host through session logging.
Chapter 13	Contains information about the VT220 script processor for advanced VT220 users. You should read Chapters 9, 10, 11, and 12 before using the VT220 script processor. You should also be familiar with using script processors.
Chapter 14	Contains information about Notepad, a desktop application used to create, modify, and display text files.
Chapter 15	Contains information about Cardfile, a desktop application used to organize information such as names, addresses, phone numbers, and directions.
Chapter 16	Contains information about Calendar, a desktop application that resembles a calendar or appointment book.
Chapter 17	Contains information about Calculator, a desktop application that works like a handheld calculator.
Chapter 18	Contains information about Clock, a desktop application that acts like a standard clock and shows the current time.
Chapter 19	Contains information about Reversi, a desktop application that is a game you can play.
Chapter 20	Contains information about an MS-Windows drawing application for users who want to draw using the mouse.
Chapter 21	Contains information about icons for the MS-Paint tools and shapes.
Chapter 22	Contains information about starting MS-Paint, drawing with MS-Paint, saving and printing an MS-Paint canvas, using MS-Paint palettes, and finishing MS-Paint.
Chapter 23	Contains information about creating a drawing in MS-Paint using the various shapes, patterns, tools, and MS-Paint editing commands.
Chapter 24	Contains information about MS-Paint commands and menus.
Chapter 25	Contains information about error messages. Each message contains a cause and a corrective action section.
Appendix A	Contains information about the WIN.INI file.
Appendix B	Contains information about program information files (PIFs).

Appendix C	Contains information about using the MS-Windows Setup utility for changing hardware configurations. You should read this before using your workstations with this guide.
Appendix D	Contains information about using the keyboard with the VT220 terminal emulator application.
Appendix E	Contains information about non-displayable characters used with the VT220 script processor.
Appendix F	Contains information about special keyboard techniques used to modify MS-Paint operations.
Appendix G	Contains information about using MS-Paint with a keyboard.

Conventions Used

Follow these conventions while using this guide:

red type	In examples of computer dialog, or as instructions, what you type is shown in red
typing	Type all spaces and punctuation marks exactly as they are printed.
Alt/Tab	While you hold down the Alt key, press the Tab key.
Alt/Shift/Tab	While you hold down both the Alt key and the Shift key, press the Tab key.
workstation	Refers to a VAXmate or PC computer used either on a network or as a standalone VAXmate.
case	You can type commands and parameters in upper or lowercase, or in a combination of both, unless otherwise noted.
numbers	All numbers shown in this guide are in decimal form, unless otherwise noted.
default directory	The directory you are currently in.
default drive	The drive you are currently in. In this guide the default network drive is shown as L.
Return	Means to press the Return key.

Chapter 1
Getting Started with MS-Windows

MS-Windows lets you organize or assign your tasks to windows. A *window* is a section of your terminal screen. With MS-Windows, you can have more than one window on your screen. Each can display a different application. Using multiple windows, you can switch between several tasks, such as writing a memo, updating a project status report, and organizing data for a monthly report.

With MS-Windows, you switch from one application to another by clicking the mouse button or pressing keys. Because you never have to stop running an application, you can continue in any application where you left off.

With MS-Windows, you do not have to memorize formats or type many commands. Each application has all the necessary commands contained in a series of menus; you select a command from a menu.

MS-Windows lets you transfer information between your MS-Windows applications. For example, you can copy information from a project status report to a monthly report while running both in the work area of your screen.

This chapter describes how to:

- Start MS-Windows
- Work in MS-Windows
- Run an application
- Use the Information System

- Scroll a window
- Use menus and commands
- Use a dialog box
- Finish an application

Starting MS-Windows

Information on starting MS-Windows and other introductory MS-Windows material, including definitions for terms such as icon, work area, and mouse, is contained in your handbook. If you have not read the handbook, do so before continuing.

Initial Window

The first window you see when you start MS-Windows depends upon how MS-Windows is installed on your workstation. When MS-Windows is installed on your workstation, you can:

- Run a specific application automatically in the work area each time you start MS-Windows
- Load specific applications as icons

  This is desirable if you consistently use several applications.
- Open the MS-DOS Executive window

If you run or load applications when MS-Windows is installed, the first window or windows you see are the applications that are set up to run automatically. You also see the icons for the applications in the icon area at the bottom of the screen. An *icon* is a graphic representation of an application that you can expand into a window. For information about running and loading applications, see Chapter 3.

If you do not run or load applications when MS-Windows is installed, the first window you see is the MS-DOS Executive window.

Working in MS-Windows

You work in MS-Windows by using the mouse or the keyboard to select and enter commands. In general, this guide describes how to enter MS-Windows commands using the mouse. For information on using the keyboard to enter commands, see Chapter 6.

> **NOTE**
> If you unplug your mouse and plug it back in, the mouse does not work. To get your mouse to work again, exit and restart MS-Windows.

Table 1-1 lists the terms and actions you need to know to use the mouse. (These are introduced in your system handbook.)

Table 1–1: Mouse Techniques

Term	Action
Point to an object	Move the mouse until the tip of the pointer rests on the desired object.
Click the left mouse button	Press and release the left mouse button.
Click on an object	Point to an object and click.
Double-click on an object	Point to an object and click twice in rapid succession.
Drag an object	Three-step action: 1. Point to an object. 2. Press and hold down the left mouse button, and move the mouse to drag the object. 3. At the desired location, release the mouse button.

Table 1-1 (Cont.): Mouse Techniques

Term	Action
Select a command	Three-step action: 1. Point to a menu. 2. Press and hold down the left mouse button. The menu commands are displayed in a drop-down menu. The menu is highlighted where the mouse points. 3. Drag the highlight to the command you want and release the mouse button.

Running an Application from an icon

To work with an application, it must be running in a window in the work area. One method of running an application is to load the application as an icon in your work area when you open MS-Windows. An icon expands into a window by doing one of the following:

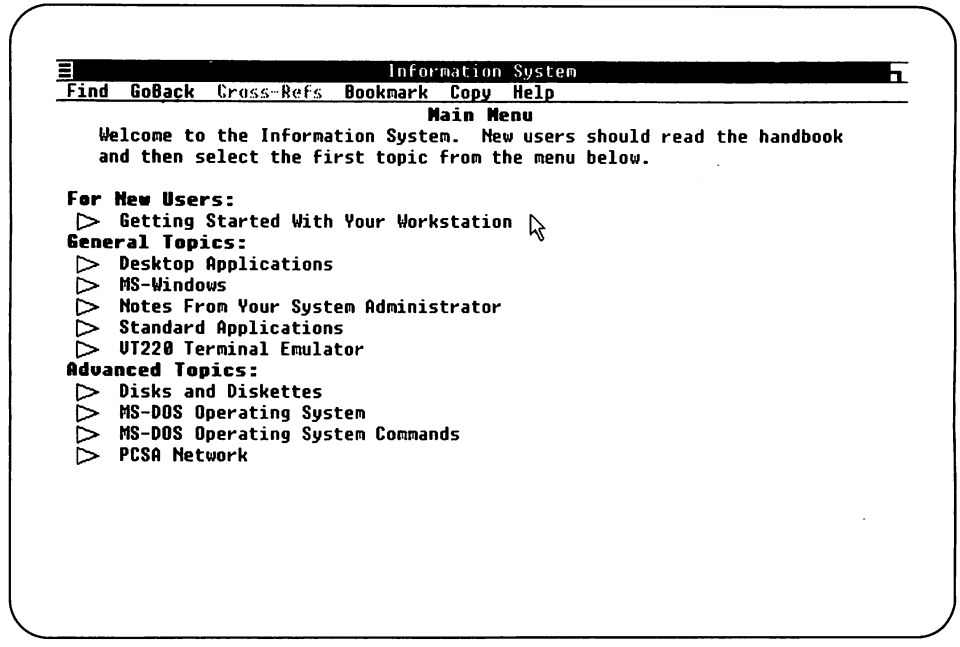
- Dragging the icon from the icon area to the center of the work area
- Double-clicking on the icon in the icon area. If the icon does not expand, try double-clicking the left mouse button faster, keeping the mouse steady.

Expanding an icon is not the only way to run an application. For information on using the MS-DOS Executive window to run applications in windows, see Chapter 3.

Using the Information System

The Information System provides you with information about MS-Windows and your workstation. The Information System is represented by an icon in the icon area that you expand. Figure 1-1 shows the Information System application after it has been expanded.

Figure 1-1: Information System Application



In the window of the Information System you see:

- The main menu of topics displayed in the work area
- A group of menu names displayed in the menu bar

To select a topic from the the Information System's main menu, click on the topic you want to select.

The highlight moves as you move the cursor up and down the menu; do not press any mouse buttons.

Information about the topic you selected is displayed in the window. Some topics, such as MS-Windows, display additional menus. In this case, select a topic from these menus as you selected a topic in the main menu.

To get additional help on using the Information System, select the Help menu.

Scrolling

Some applications have more information than fits in the window at one time. By using the scroll bars, you can move and display all the information.

A window can have one or two scroll bars:

- One is on the right side of the application window.
- One is on the bottom of the application window.

Either or both of the scroll bars can be used by an application, depending on where the additional information is:

- If a scroll bar is on the right side of the application window, you can scroll up and down. For example, you can scroll this way when you run a word processing application with a long text file.
- If a scroll bar is on the bottom of the application window, you can scroll to the right or left. For example, you may scroll this way when you run a spreadsheet application.

Table 1-2 shows the procedures for scrolling with the mouse.

Table 1–2: Scrolling with the Mouse

To scroll...	Do this...
One line	Click on the scroll arrows at either end of the scroll bar. Each time you click the left mouse button, the window scrolls one line in the direction you selected. If you hold down the left mouse button, the window scrolls faster.
One window	Click on the shaded area on either side of the small white box (the scroll box) in the scroll bar.
To a general location rapidly	Drag the scroll box to a position in the scroll bar corresponding to the general location you want (beginning, middle, or end of the file).

Using Menus and Commands

System Menu

The System menu contains commands for manipulating windows and is common to most applications. It is represented by a box with three lines inside, located in the upper-left corner of the window.

The commands in the System menu are displayed in a drop-down menu. Figure 1-2 shows the System menu commands.

Figure 1-2: System Menu Commands

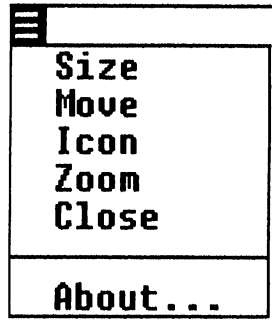


Table 1-3 describes the commands in the System menu.

Table 1-3: System Menu Commands

Command	Description
Size	Changes the size of a window when you have two or more windows in the work area. With this command, you can make the window larger or smaller.
Move	Moves a window to another position you select in the work area, when you have two or more windows in the work area. This command also expands an icon into a window in the work area and shrinks a window to an icon in the icon area.

Table 1–3 (Cont.): System Menu Commands

Command	Description
Icon	Shrinks a window to an icon in the icon area. This command also expands an icon into a window in the work area.
Zoom	Enlarges a window to fill the entire screen. Selecting this command a second time returns the window to its original size and position.
Close	Closes the window of the application, stops running the application, and removes the application from system memory. However, the application remains in your MS-Windows directory and on your disk.
About	Displays information about the application running in the active (current) window. The About command is not a part of all applications. Also, some applications may use other commands, such as Help or Info, instead of the About command.

NOTE

Some applications can show additional commands in the System menu. See your application manuals for details on these commands. For more information on additional commands for these applications, see Chapter 7.

Application Menus

Each application also has its own set of menus and commands. These menus are displayed in the menu bar at the top of the window below the application title bar. As with the System menu, each menu in the menu bar has a drop-down menu for displaying the list of menu commands. (Sometimes, the menu name is also the only command in the menu. In this case, there is no drop-down menu.) Some applications do not have any menus in the menu bar; they only have a System menu.

You select a menu to display the menu commands in a drop-down menu. To perform an action, you must select a command from a menu. You can drag the highlight up and down the menu as long as you hold down the left mouse button.

When you release the left mouse button, the MS-Windows application performs the highlighted command. However, if you release the left mouse button before you drag the highlight into the menu, the drop-down menu is removed from the display.

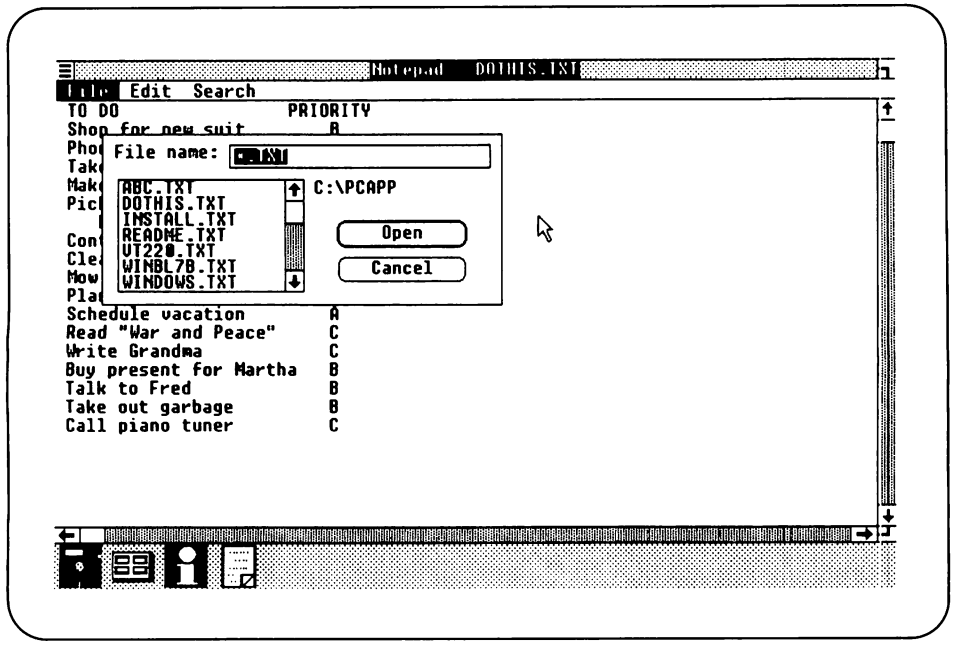
NOTE

Some commands in a menu are displayed in a lighter shade than the other commands. You cannot select them because they are disabled. For example, if you have only one window in the work area, the Size command is disabled (displayed in a lighter shade), because you cannot change the size of a window if it is the only window in the work area. However, when you have more than one window displayed in the work area, the Size command is not disabled, and you can change the size of the windows.

Using a Dialog Box

When you select a command, MS-Windows often needs additional information before it can execute the command. When MS-Windows needs additional information, it displays a dialog box. Figure 1-3 shows a typical dialog box. After you provide the needed information in the dialog box, MS-Windows executes the command.

Figure 1-3: Dialog Box



A *dialog box* is a rectangle, resembling a window, which overlays a portion of the screen in which you select a command. If you display several windows in the work area, the dialog box can overlay portions of more than one window, depending on the size of the windows and the dialog box.

The dialog box contains areas where you either type the information required by MS-Windows or select options to supply the needed information.

Often, a dialog box displays some information already in it, for example, what you have selected on the screen or other options you selected earlier. Also, some options may be disabled.

After you enter information or select an option, you perform the action by selecting a command button in the dialog box.

The following key words describe the components of a dialog box.

Text Box

The text box is where you type information needed to carry out a command. Figure 1-4 shows a text box.

Figure 1-4: Text Box

What you type is displayed to the left of the blinking vertical line, called the insertion point. To position the insertion point in the text box, click where you want the insertion point moved. As you type, the insertion point moves to the right.

To correct typing mistakes, press the Word Char key. Each time you press it, one character to the left of the insertion point is deleted.

The text box can:

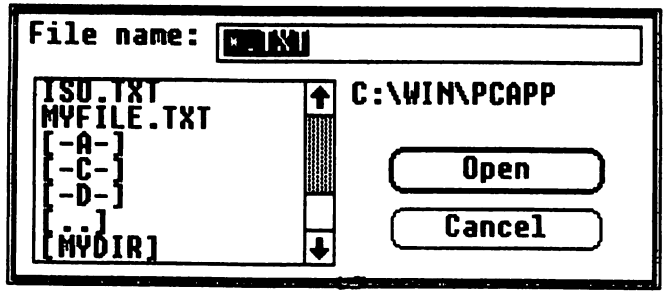
- Be blank when the dialog box is displayed
- Contain text if you already selected something applicable for the command
- Contain a default option

If information is already present in the text box, you can type new information. When you press the first key, any information already present is removed. You can also press the Word Char key to delete information already in the text box.

List Box

A list box lists the choices you can select for a command. Figure 1-5 shows a list box.

Figure 1-5: List Box



You can distinguish between files, drives, and directories in a dialog box. For example, in the list box shown in Figure 1-5:

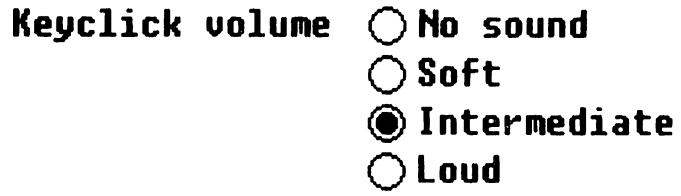
MYFILE	Is the name of the file, MYFILE.
[-A-]	Represents drive A. Brackets and hyphens surround the name of a drive.
[MYDIR]	Represents directory MYDIR. Brackets surround the name of a directory.
[..]	Represents the parent directory (one level up).

To select an item in the list box, click on it.

Option Buttons

Option buttons let you select one option from a group. They are labeled to describe their functions. Figure 1-6 shows the option buttons for controlling the keyclick volume.

Figure 1-6: Option Buttons



To select an option from a group, click on it.

Check Boxes

Check boxes represent options that you can turn ON or OFF. They are labeled to describe the functions of the options. When an X is displayed in the check box, the option is ON. Click on the X again to turn the option OFF. You can select as many check boxes as needed. Figure 1-7 shows a check box for a mouse option.

Figure 1-7: Check Box

To select a check box, click on it.

Command Buttons

Command buttons are large rectangular buttons (with rounded corners) that are labeled to describe how they affect the command you selected. Figure 1–8 shows sample command buttons.

Figure 1–8: Command Buttons

To select a command button, click on it.

When you select a command button, MS-Windows performs the action immediately. Command buttons you see in MS-Windows include:

- Ok or Yes

  The command is performed. Sometimes, the button that performs the command is labeled to describe the selected command, such as Open or Save.

- Cancel or No

  The selected command is canceled.

- Reset

  Anything you entered or changed in the dialog box is ignored. Settings are reset to their values before the dialog box was displayed.

The default command button has bold borders. Usually, it is the Ok command button.

Finishing an Application

When you finish using an application and want to remove it from the work area, you can do either of the following:

- Shrink the application to an icon in the icon area.

  The application continues running.

- Close the application.

  When you close an application, it:

  — Stops running

  — Remains in the MS-Windows directory but does not take any space in the work area

Shrinking an Application to an Icon

To shrink an application to an icon, you can:

- Double-click on the title bar of the application you want to shrink.
- Point to the title bar and drag the icon into the icon area.
- Select the Icon command from the System menu.

  When you release the left mouse button, MS-Windows performs the Icon command, and the application is displayed in the icon area as an icon.

Closing an Application

To close an application, you can:

- Select the Close command from the System menu.

  When you release the left mouse button, MS-Windows executes the Close command, and the window for the application closes.

- Double-click on the System menu box of the application you want to close.

NOTE

When you close an application in which you opened a data file and made changes, a dialog box is usually displayed asking you to either save the changes you entered or confirm that you want to close the application.

Chapter 2
Running Multiple Applications

This chapter describes:

- Running multiple applications
- Displaying multiple windows
- Moving windows
- Switching windows
- Changing the size of a window
- Shrinking a window to an icon
- Transferring information between windows
- Receiving messages from another application

When you use MS-Windows, you can run more than one application at the same time. Each application runs in its own window.

The procedures and examples described in this chapter tell you how to run two and three windows at one time using these applications:

You can use these procedures with other applications that run in a window.

- Notepad
- Clock
- Information System

Running Multiple Applications

You can run as many applications as you want with MS-Windows, depending on your workstation's memory capacity.

With MS-Windows, you can also display more than one window for the same application. For example, two windows can display the Notepad application, with each window containing a text file. One Notepad window can contain your monthly report, while another Notepad window can contain a memo.

When you have a small amount of memory, MS-Windows can excessively load data from your disk. (Your workstation runs slower than usual.) If this occurs, close any applications you do not need. This gives MS-Windows more memory for your remaining applications.

If you try to run an application and no memory is available, MS-Windows displays the message "Not enough memory to run." Use the Close command to stop running any unwanted applications, and try to run the application again.

Displaying Multiple Windows

You do not have to change the size of any window to make all windows fit in the work area. As you add or subtract each new window, the existing windows are automatically made smaller or larger to accommodate the number of windows in the work area. This process is called *automatic tiling.*

MS-Windows follows these general automatic tiling rules when you expand an icon to a window:

- If there are no windows in the work area, the icon expands to a window that fills the entire work area.
- If you place the icon within an existing window, the icon replaces the existing window. The existing window shrinks to an icon in the icon area.
- If you place the icon on the border between two existing windows, the new window expands between the existing windows.
- If you place the icon on a vertical or horizontal border of the screen, the new window expands between the border and the adjacent window.

- When you expand an icon by double-clicking on it:
  - — If there are no windows in the work area, the icon expands to a window that fills the entire work area.
  - — If there are other windows in the work area, the newly-selected application is displayed directly above the icon area and below the existing windows.

Displaying Icon Names

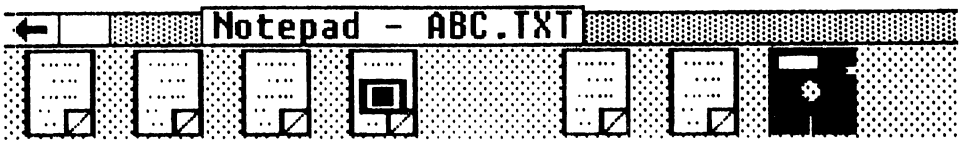
Although icons are unique for each application, you can have more than one icon for the same application, such as Notepad, each containing a different text file. Because all Notepad icons look alike, you need to display the names of the applications the icons represent to identify which file you want.

To display an icon name:

1. Point to the icon.
2. Press and hold down the Shift key.

   The icon name is displayed above the icon. Figure 2-1 shows an icon with the icon name.

Figure 2-1: Displaying the Icon Name



For the Notepad icon, the icon name is displayed with the name of its text file. The icon name displayed above the icon is the same as the icon name displayed in the title bar when the application runs in a window. The icon name remains as long as you hold down the Shift key and point to the icon.

To display the name of another application, continue to hold down the Shift key and point to the other application icon.

Running Two Applications

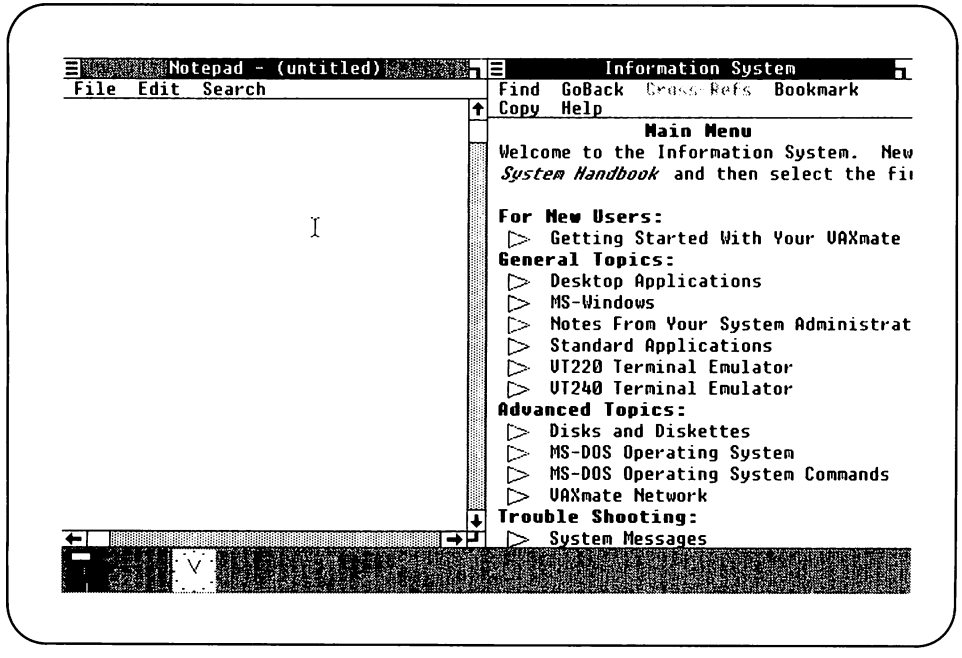
Open the Information System window and display Notepad as an icon.

To expand the Notepad icon and display it as a second window, drag the Notepad icon to the left border in the work area.

When you hold down the left mouse button, you can drag the icon anywhere on the screen. When you release the left mouse button in the work area, the icon expands to a window.

The Notepad window is now in the left half of the work area, and the Information System window is in the right half. Figure 2–2 shows both windows.

Figure 2–2: Displaying Two Windows



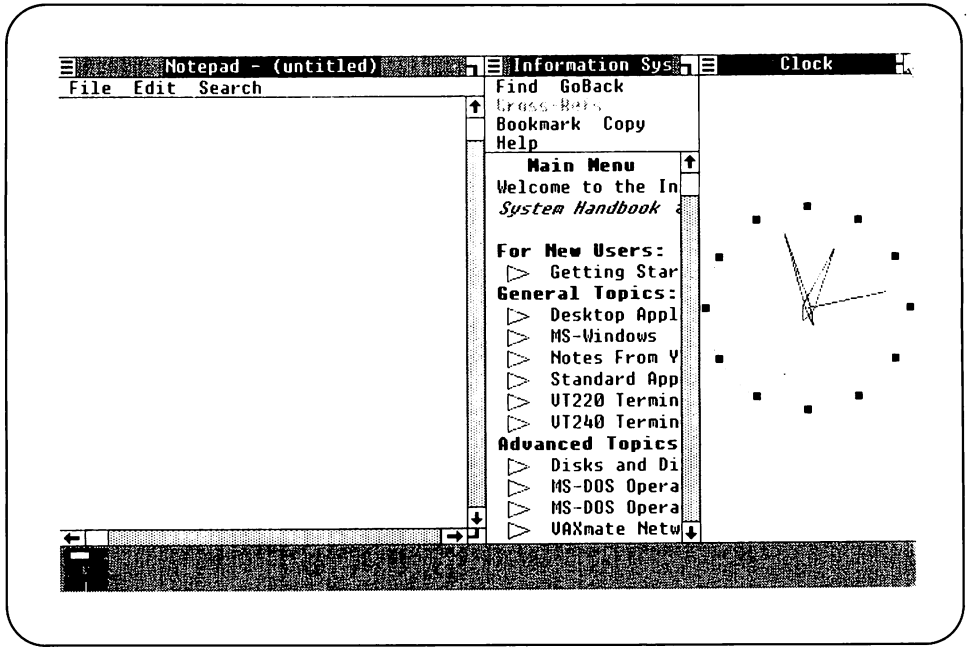
Running Three Applications

To expand the Clock icon and display it as a third window, drag the Clock icon to the right border of the Information System window.

The Clock icon changes to a blank rectangle when you drag it.

The Clock window is displayed in the right quarter of the work area. Figure 2–3 shows the Notepad, Information System, and Clock windows.

Figure 2–3: Displaying Three Windows



Switching Windows

Although you can run several windows simultaneously in the work area, you can only work in one window at a time. The window in which you work is called the *active window*. Only the active window is affected by commands and any other information you enter with the mouse or the keyboard.

To make another window active, you switch to another window and click inside of that window. The new active window has its title bar highlighted, and you can now work in this window.

> **NOTE**
> If you display a pop-up program/window on the screen so that it becomes unreachable with the mouse, use the keyboard to make it active and move it. Use the Alt/Tab key sequence to make the pop-up window active again, then use the Alt/Spacebar sequence to open the System menu. Select the Move command to move the window.

If you switch from an active window with an application running in it and then switch to this window again, you resume activity where you left off.

Moving Windows

You can rearrange your windows in the work area. For example, you can move the the Clock window below the Notepad window to make the Information System window wider and easier to use.

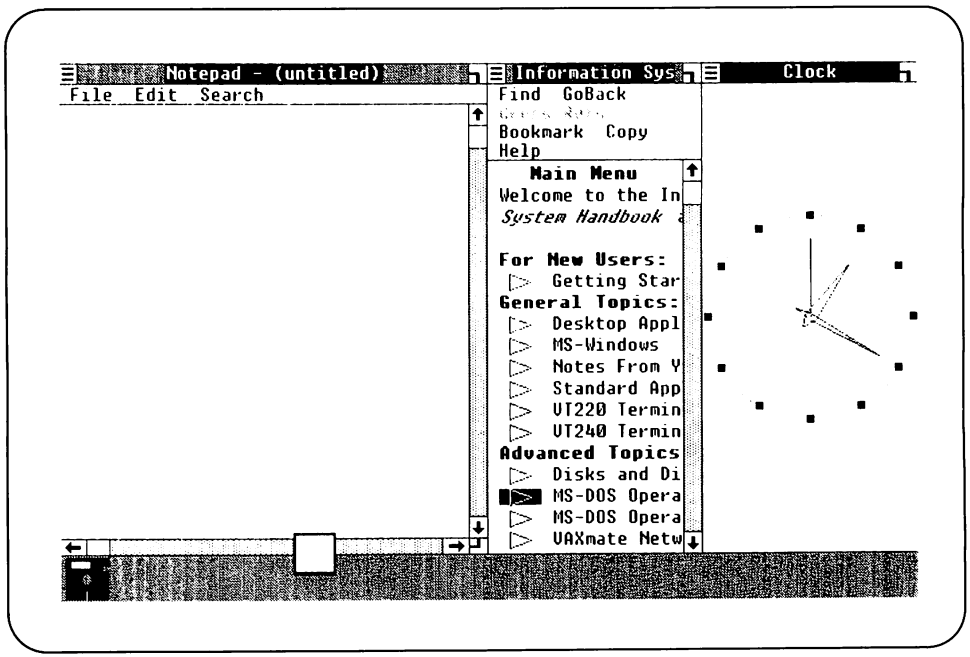
To move the Clock window:

1. Point to the middle of the Clock window title bar.

   When you click on the title bar, the cursor changes to the Clock icon (a blank rectangle).

2. Drag the icon down and to the left until the icon is on the lower border between the Notepad window and the icon area. Figure 2-4 shows moving the Clock icon.

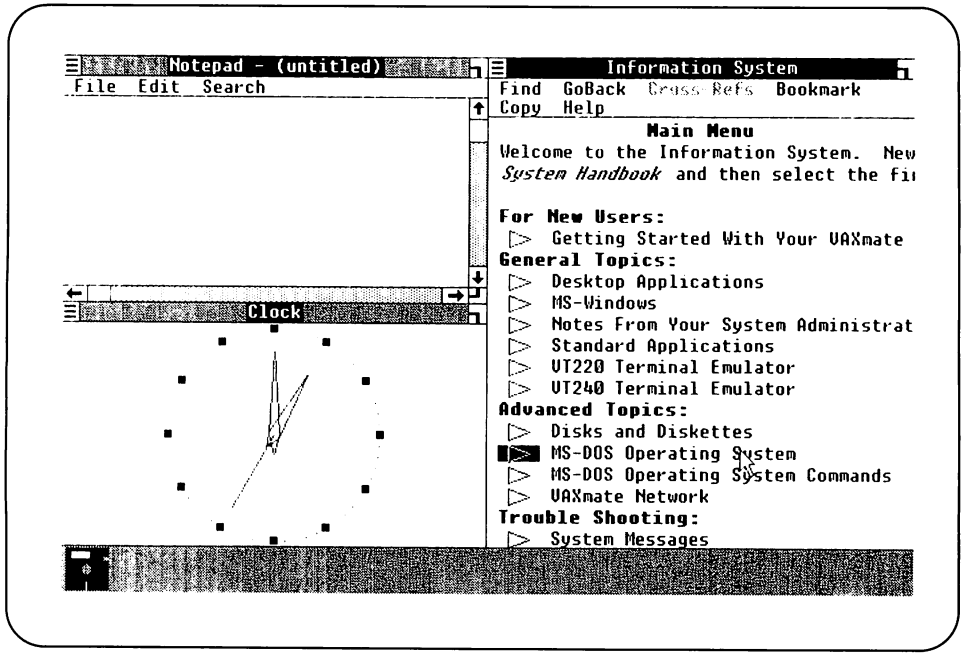
Figure 2-4: Moving the Clock Icon



3. Release the left mouse button.

   The Clock window is below the Notepad window. Figure 2-5 shows the new location of the Clock window.

Figure 2–5: Clock Window After a Move



Changing the Size of a Window

When you have more than one window in the work area, you can change some of the windows' sizes to better use the work area. Using the System menu commands and other components of a window, you can make a window:

- Larger
- Smaller
- Fill the entire screen (zoom)

Making a Window Larger

To make a window larger, use:

- The Size command from the System menu
- The Size box in the title bar

Using the Size Command

To make the Notepad window larger by using the Size command:

1. Select the Size command from the System menu of the Notepad window.

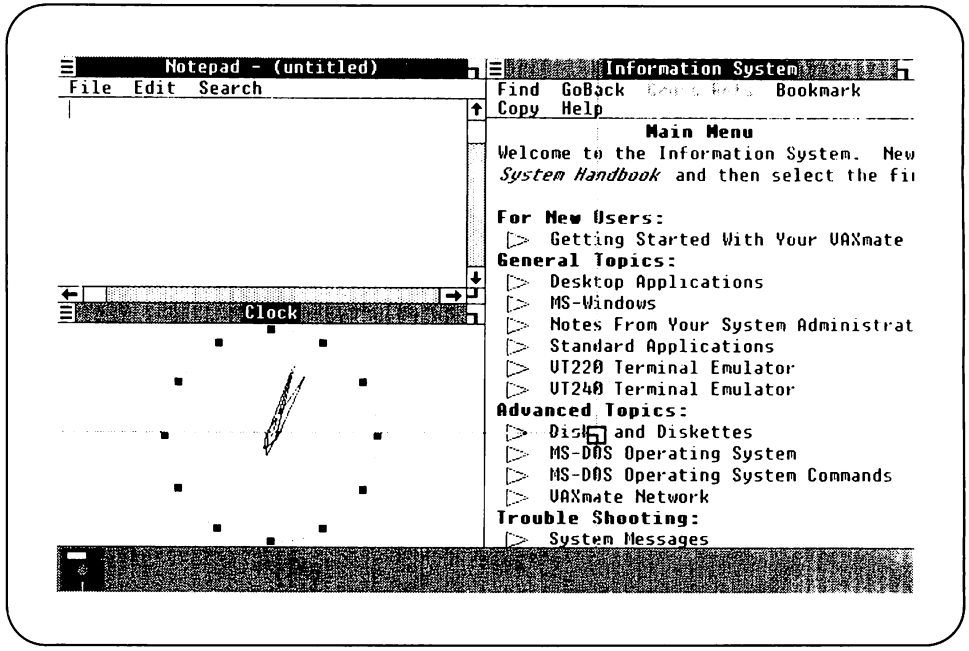
   The cursor changes to a small box, called the size box.

2. Move the size box beyond the Notepad window borders until the window is the size you want. You do not need to hold down the left mouse button to move the size box.

   Nothing happens until the size box moves beyond the borders of the window. After the size box crosses the borders, a pair of lines, one vertical and one horizontal, is displayed. These lines mark the new borders of the window you are sizing.

   Figure 2–6 shows the new size for the Notepad window.

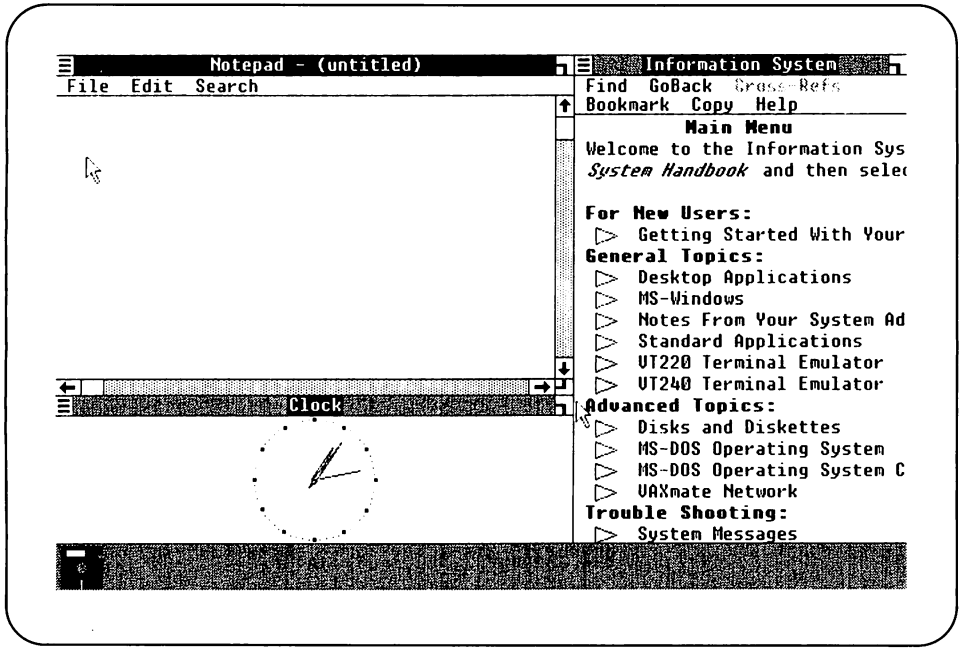
Figure 2–6: Defining the Larger Notepad Window



3. When the window is the size you want, click the left mouse button.

   MS-Windows widens the Notepad window and adjusts the size of any adjacent windows. Figure 2–7 shows the larger Notepad window.

Figure 2–7: Larger Notepad Window



Using the Size Box

Some windows have a size box in their upper- or lower-right corner.

To make a window larger using the size box:

1. Point to the size box of the window you want to change.
2. Drag the size box beyond the window borders.

3. When the window is the size you want, release the left mouse button.

   MS-Windows makes the window larger and adjusts the size of the other windows in the work area.

Making a Window Smaller

To make a window smaller, use the same process as for making a window larger:

- The Size command from the System menu
- The Size box in the title bar

Be sure to drag the size box beyond the window border before shrinking the window.

Filling the Screen with a Window

When you are working with more than one window, you can enlarge one window temporarily to fill the entire screen, without moving the other windows to the icon area. This process is called *zooming*.

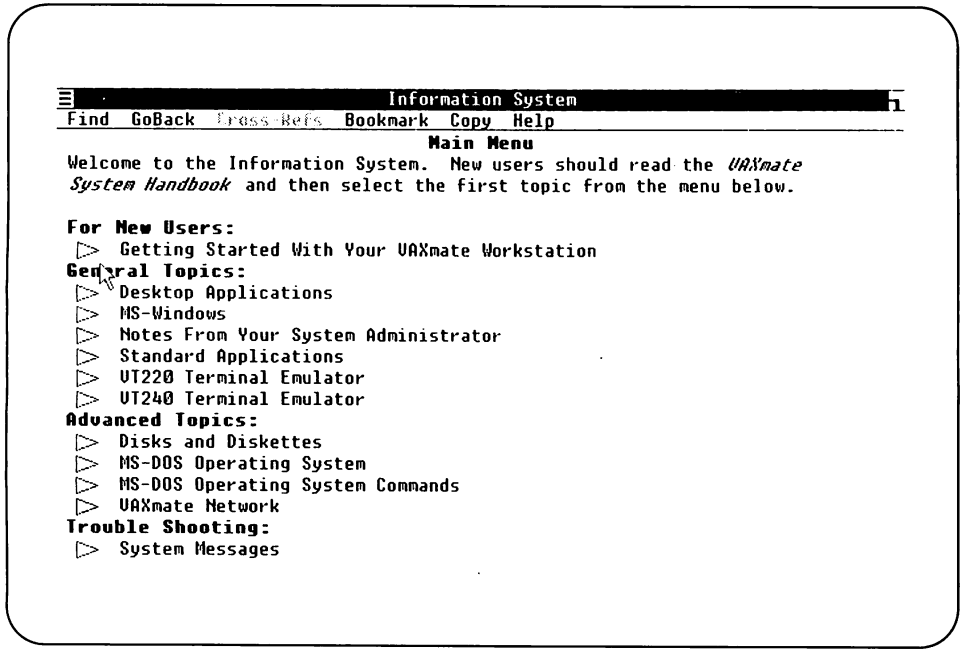
To fill the screen with a window, use:

- The Zoom command from the System menu
- The size box

Using the Zoom Command

To zoom the Information System window, select the Zoom command from the System menu of the Information System window. The window enlarges to fill the entire screen, including the icon area. Figure 2-8 shows an Information System window that has been zoomed.

Figure 2–8: Window Filling the Entire Screen



To restore the window to its former size, select the Zoom command again.

Using the Size Box

To use the size box to zoom, double-click on the size box.

The window enlarges to fill the entire screen, including the icon area.

To restore the window to its former size, double-click on the size box again.

Shrinking a Window to an Icon

You can free space in the work area by shrinking a window into an icon. For example, you can shrink the Information System to an icon if you are finished using it but want it available for later use. It still runs in memory but does not take up space in the work area.

To shrink a window to an icon, use:

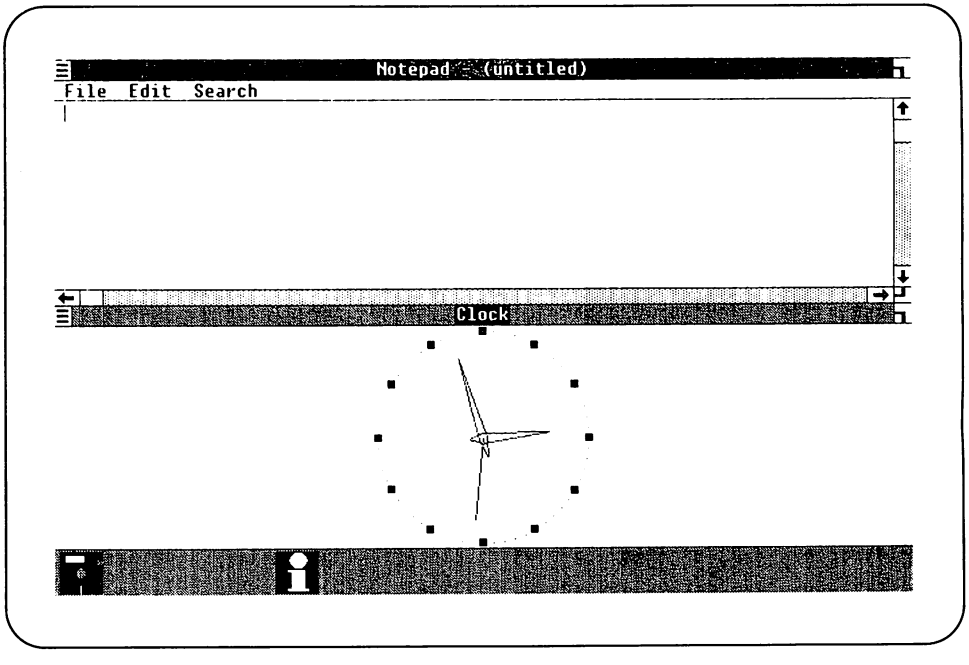
- The Icon command
- The title bar

Using the Icon Command

To shrink the Information System window into an icon using the Icon command, select the Icon command from the System menu of the Information System window.

The Information System shrinks to an icon, and the other windows adjust to fill the work area. Figure 2–9 shows an example of shrinking a window to an icon.

Figure 2–9: Shrinking a Window to an Icon



Using the Title Bar

To shrink the Information System window to an icon using the title bar, you can:

1. Point to the middle of the Information System title bar.

   Press the left mouse button. The cursor changes to the application icon.

   Drag the Information System icon to the icon area and release the left mouse button.

2. Double-click on the middle of the title bar of the window you want to shrink.

Transferring Information Between Windows

You can transfer, copy, or move information within a window or between windows:

- From one place in a window to another

  For example, you can move text in a report as you edit.

- From one window to another window when both windows are running the same application

  For example, you can transfer information from one report being prepared by a word processing application into another report being prepared by the same word processing application.

- From one window to another window when the windows are running different applications

  For example, you can transfer numbers from a spreadsheet application into a report being prepared with a word processing application.

Cutting and Pasting

To transfer larger quantities of information, use the cut (or copy) and paste features of MS-Windows.

To cut and paste information, MS-Windows uses the Clipboard to hold information. The Clipboard is a temporary storage area that holds the information while you move it from its original location to its destination. The Clipboard is always available when you run MS-Windows. You do not need to run any program to use the Clipboard. However, if you want to look at what is stored in the Clipboard, you select and run CLIPBOARD.EXE.

Each time you cut or copy information to the Clipboard, anything already stored there is overwritten (the previously stored information is deleted.)

To transfer information to the Clipboard, use the Cut command or the Copy command procedure of your application. To insert information from the Clipboard to your application, use your application's Paste command procedure. Although your application may have different names for these commands, the commands should work as described in Table 2-1.

Table 2–1: Cut, Copy, and Paste Commands

Command	Description
Cut	Deletes the selected information from the window and places it on the Clipboard.
Copy	Copies the selected information and places it on the Clipboard. The selected information remains intact in its original location.
Paste	Inserts information from the Clipboard into a selected location in a window. You can paste the same information from the Clipboard as many times as you want as long as you are using the same paste buffer contents. When you put new information into the Clipboard, the previously stored information is overwritten. If you move the cursor in the window, the information is inserted and displayed to the left of the cursor. If you have marked text for selection in the receiving document, the information from the Clipboard replaces the selected text. For more information on marking text, see Chapter 7.

Generally, *ASCII text* (text composed of 8-bit binary numbers representing the alphabet, punctuation, numerals, and other special symbols) and graphics are stored on the Clipboard, but formatting commands for your text or graphics are not. However, this can vary with your application.

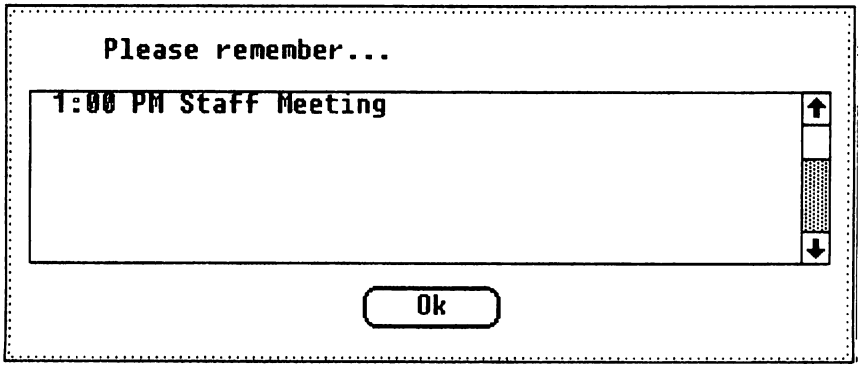
Some standard applications (applications that run on your workstation) have commands similar to Cut, Copy, and Paste, although they do not necessarily use the MS-Windows Clipboard to transfer information.

Receiving Messages from Another Application

When another application sends you status or error information, you hear a beep, and the application sending you the message flashes its title bar or icon. To display the message in a dialog box, switch to the flashing window or icon by clicking on it.

Figure 2–10 shows an example of a message an application sends you. In this example, the Calendar application reminds you of an appointment.

Figure 2–10: Message from Another Application



Chapter 3
Using the MS-DOS Executive Window

This chapter describes the MS-DOS Executive window and its components and tells you how to:

- Use menus and commands
- Load an application
- Run an application
- Run MS-DOS commands and programs
- Finish your MS-DOS Windows session

Chapter 4 discusses using the MS-DOS Executive window to work with files. Using the MS-DOS Executive window to work with directories and disks is discussed in Chapter 5.

Defining the MS-DOS Executive Application

You use the *MS-DOS Executive application,* an MS-Windows application to control or manage your MS-Windows session. The MS-DOS Executive application runs when MS-Windows runs, either as a window or as an icon. (Chapter 7 describes an exception to this rule, associated with running certain kinds of applications.)

With the MS-DOS Executive application, you can perform most of the functions that you do by entering MS-DOS commands.

When you start MS-Windows, the first window you see is the MS-DOS Executive window. You use this window to:

- Load any application icons into the icon area
- Run any application not already loaded as an icon

Some key diskettes are set up so that when you start MS-Windows an application runs automatically in a window. In this case, the MS-DOS Executive application is displayed in the icon area as a diskette icon. To run the MS-DOS Executive application, expand its icon into the work area.

MS-DOS Executive Window Components

Figure 3-1 identifies the components of the MS-DOS Executive window. Table 3-1 describes these components.

Figure 3–1: MS-DOS Executive Window

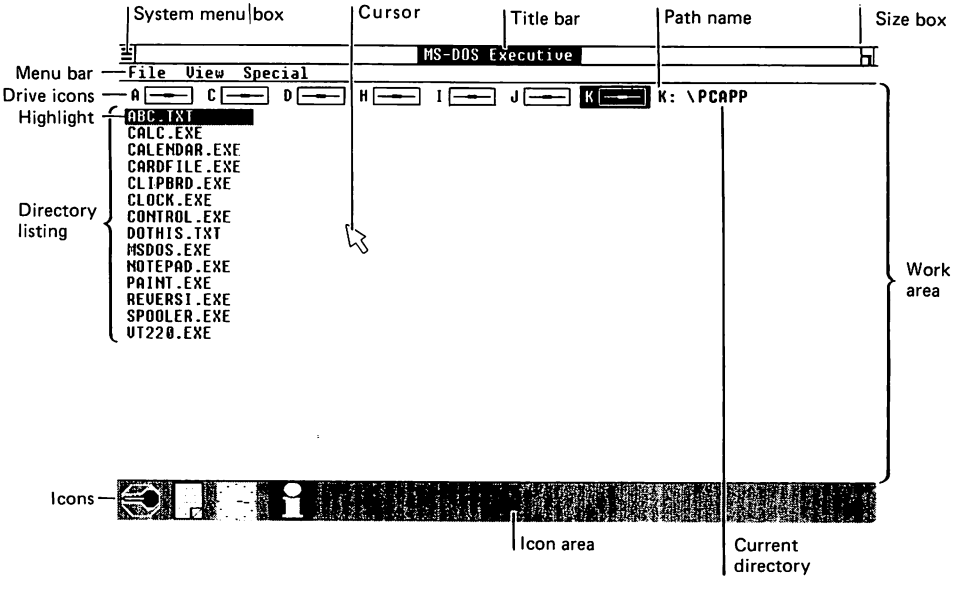


Table 3–1: MS-DOS Executive Window Components

Component	Description
System menu box	Contains the commands, such as Move, Zoom, and Close, you use to manipulate the window. This menu is common to most MS-Windows applications.
Menu bar	Contains the three menus of the MS-DOS Executive application: File, View, and Special.
Title bar	Displays the name of the MS-DOS Executive application.
Size box	Changes the size of a window.
Cursor	Is the mouse cursor you use to point to an object.
Work area	Is the expanded window.
Scroll bar	Displays in the window when there is more information than can be displayed in one screen.
Drive icons	Represent the disk drives of your workstation. The current drive is highlighted.
Highlight	Shows the file name or menu command that is currently selected.
Path	A hierarchy of directories. Consists of the drive letter, the volume name (if there is one), the directory and subdirectory names, then the current directory name. Each directory is separated by a backslash
Current directory	The directory you are in now. In the path name, the current directory is the one at the right.
Directory listing	Lists the file names in the current directory. A directory is a group of files stored on a disk.

Using Menus and Commands

The MS-DOS Executive has four menus from which you can display and select commands:

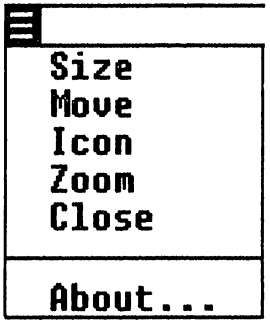
- System menu
- File menu
- View menu
- Special menu

The System menu is represented by the System menu box. The other three menus are in the Menu bar. When you select a menu, a drop-down menu is displayed, containing the menu's commands.

System Menu

The System menu contains commands for manipulating the windows and is common to most applications. Figure 3-2 shows the System menu commands.

Figure 3-2: System Menu Commands



When you select the About command in the MS-DOS Executive window, MS-Windows displays a dialog box, showing the amount of disk space and memory space available on your workstation.

File Menu

The File menu contains commands that let you act on the files displayed in the MS-DOS Executive window. When you select any of these commands, except for the Get Info command, MS-Windows displays a dialog box in the window. In the dialog box, you enter additional information needed by the command before MS-Windows runs the command.

Figure 3-3 shows the File Menu. Table 3-2 describes the File menu commands. For more information on using the File menu commands, see Chapter 4.

Figure 3–3: File Menu Commands

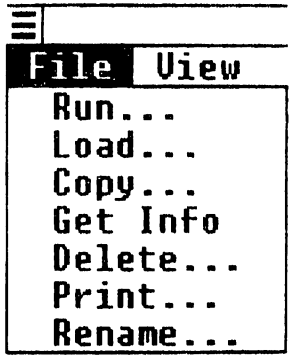


Table 3–2: File Menu Commands

Command	Description
Run	Runs the application in the window. Select the Run command to run an application not in the current directory listing and to enter a program parameter for the selected application. Using the Run command is the preferred method of running an application.
Load	Loads the application as an icon in the icon area. Select the Load command to load an application not in the current directory listing and to enter a program parameter for the application.
Copy	Copies the files to a different directory or disk, or to a different file name in the same directory.
Get Info	Displays the file names, file extensions, size in bytes, and the date and time the file was created or most recently changed for the selected files.
Delete	Deletes the selected files from the directory and the disk.
Print	Prints the selected files or directory listing on your printer.
Rename	Changes the name of the selected files.

View Menu

The View menu contains commands that let you list the directory files. The commands are divided into three groups. Only one command from each group can be active at a time. The active command in each group is preceded by a check mark.

By selecting the commands you want, you can list the directory files in the way you want. The commands you select from the View menu affect any directory you display in the MS-DOS Executive window.

Figure 3–4 shows the View menu. Table 3-3 describes the View menu commands, according to each group.

Figure 3–4: View Menu Commands

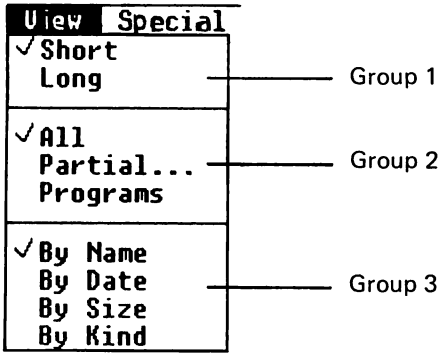


Table 3–3: View Menu Commands

Command	Description
Group 1:	Lets you select how much information is displayed for each file.
Short	Displays a directory listing by file name only (default setting). Directory names are displayed in bold letters.
Long	Displays a directory listing by file name, file extension, size in bytes, and date and time last changed for each file listed. The key information by which the files are sorted (name, date, size, or type) is displayed in boldface. Directory names are listed in one column, with <DIR> to the right of each directory name.
Group 2:	Lets you select which files are displayed.
All	Lists all the files in a directory (default setting).
Partial	Displays all files with the specified file specification. For example, if you type *.TXT in the displaying dialog box, only files having the file extension .TXT are displayed.
Programs	Displays all files that can run as programs, such as files having the file extension .EXE, .BAT, and .COM.
Group 3:	Lets you select the key information by which the files are sorted and displayed. If you select the Long command from Group 1, the key information is displayed in boldface.
By Name	Sorts a directory alphabetically by file name (default setting).
By Date	Sorts a directory by the date and time each file was created or most recently changed. MS-Windows lists the most recent date and time first.
By Size	Sorts a directory according to the size of each file in bytes. MS-Windows lists the files from largest to smallest.
By Kind	Sorts a directory alphabetically by file extension. MS-Windows sorts files with the same file extension alphabetically by name.

Special Menu

The Special menu contains commands that let you:

- Finish the MS-Windows session
- Work with disks
- Work with directories

Figure 3–5 shows the Special menu. Table 3-4 describes the Special menu commands. For more information about the commands that let you work with disks and directories, see Chapter 5.

Figure 3–5: Special Menu

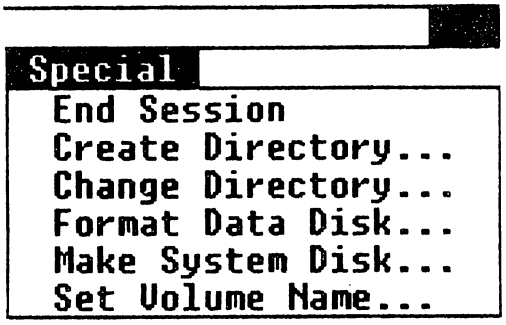


Table 3–4: Special Menu Commands

Command	Description
End Session	Finishes your MS-Windows session.
Create Directory	Creates a new directory.
Change Directory	Changes directories.
Format Data Disk	Formats a data diskette.
Make System Disk	Creates a diskette containing the MS-DOS operating system files.
Set Volume Name	Assigns the name you enter to a disk (also called a volume). This command can also change the name of an existing volume.

Loading an Application

Use the MS-DOS Executive window to load an application as an icon in the icon area.

To load an application into the icon area, use:

- The Load command from the File menu
- The file name

Using the Load Command

Use the Load command from the File menu to:

- Load an application into memory
- Run the application as an icon
- Display the application icon in the icon area

From your default directory, you can use the Load command to load any application in your path. The default directory becomes the application's current directory.

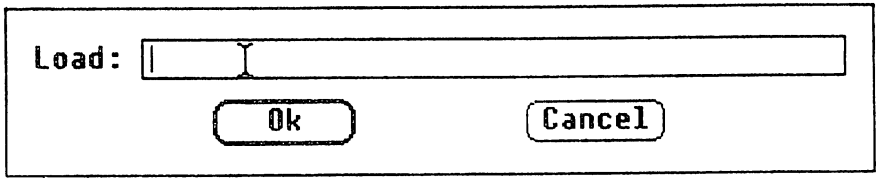
The Load command is also useful for entering a program parameter or a command line argument when you start the program. For example, when loading Notepad, you can specify a text file to edit.

To load an application:

1. Select the Load command from the File menu.

   The MS-DOS Executive window displays the Load dialog box. Figure 3–6 shows the Load dialog box.

Figure 3–6: Load Dialog Box



2. In the dialog box, type the file name of the application you want to run.

   If the application is not in the path, include the drive and directory of the application you want to run.

   Also type any additional information that the application needs, such as a command line argument.

3. Click on the Ok command button.

   The application you selected loads into memory. If the application has an icon, it runs in the icon area, and its icon is displayed. Otherwise, it may display as a pop-up window.

If you have an application in the current directory, you can highlight the file name of the application before you select the Load command from the File menu. This name is displayed in the dialog box, and you can add any program parameters necessary for your application.

Using the File Name

To load an application from the current directory into the icon area:

1. Press and hold down the Shift key.
2. Double-click on the file name of the application you want to load as an icon.

   The application you selected from the current directory loads into memory. It runs in the icon area, and its icon is displayed.

Running an Application

To run an application in a window, using the MS-DOS Executive window, you can use:

- The Run command from the File menu
- The file name

Using the Run Command

The Run command gives you another way to run an application. From your default directory, you can use the Run command to run any application that is in your path. The default directory becomes the current directory for the application you are running.

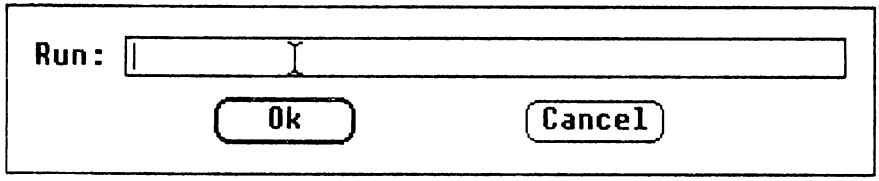
The Run command is also useful for entering a program parameter and command line arguments when you start the program. For example, when running Notepad, you can include the name of a text file you want to edit.

To run an application:

1. Select the Run command from the File menu.

   The MS-DOS Executive window displays the Run dialog box. Figure 3–7 shows the Run dialog box.

Figure 3–7: Run Dialog Box



2. In the dialog box, type the file name of the application you want to run.

   If the application is not in the path, include the drive and the directory of the application you want to run.

   Also type any additional information that the application needs, such as a command line argument.

3. Click on the Ok command button.

   The application you selected replaces the MS-DOS Executive application in the window. The MS-DOS Executive application changes to an icon.

If you have an application in the current directory, you can highlight the file name of the application before you select the Run command from the File menu. This name is displayed automatically in the dialog box, and you can add any program parameters necessary for your application.

Using the File Name

To run an application in your default directory, double-click on the file name of the application you want to run.

The file name is highlighted.

The cursor temporarily changes to an hourglass, indicating that MS-Windows is loading the application into memory.

The application you selected replaces the MS-DOS Executive application in the window. The MS-DOS Executive application changes to an icon.

Using Temporary Files

Some applications that run with MS-Windows create temporary files with the file extension .TMP to store your work.

The file names for temporary files begin with a tilde and letters indicating the application name. For example, a temporary file for MS-Paint has the file name ~MSP*.TMP.

You can create a special directory on your local hard disk drive to hold temporary files. To send temporary files to this directory, put the SET TEMP command in your AUTOEXEC.BAT file.

Do not delete these files while MS-Windows is running because an application could be using them. You can delete them after quitting your MS-Windows session.

Running Batch Files

You run batch files only from the MS-DOS Executive window. If you run a standard application from a batch file, you should create a PIF for the batch file. For more information about PIFs, see Appendix C.

Set options in the batch file PIF to be the same as the application PIF. However, set the Memory Required and Memory Desired options for the batch file PIF to 32K, regardless of the memory requirements for the application.

Using MS-DOS Commands and Programs

MS-DOS commands are divided into three groups:

- Commands you must use outside of MS-Windows
- Commands you run from MS-Windows with COMMAND.COM
- Commands you run from the MS-DOS Executive window

Those commands that you must run outside MS-Windows, you can run from the MS-DOS operating system prompt. Or, you can put these commands in your AUTOEXEC.BAT file, which runs automatically before MS-Windows starts. For more information on MS-DOS commands and programs, see the *MS-DOS Reference Guide* or refer to the DOS reference manual that comes with your DOS software.

An asterisk (*) marks commands that have an MS-Windows equivalent.

The MS-DOS commands you must run outside MS-Windows are:

APPEND	GRAFTABL	MODE	SHARE
ASSIGN	GRAPHICS	NET START	SORT
CHKDSK	JOIN	PRINT*	
CTTY	DECKEYB	RECOVER	
FONT	LCOUNTRY	SELECT*	

The MS-DOS commands you can run in MS-Windows from the Command window are:

BREAK	ECHO	MORE	SET
CHDIR*	ERASE*	PATH	SHIFT
CLS	EXIT	PAUSE	TIME*
COPY*	FOR	PROMPT	TYPE
DATE*	GOTO	REM	VER*
DEL*	IF	REN*	VERIFY
DIR*	MKDIR*	RMDIR*	VOL*

The MS-DOS commands you can run from the MS-DOS Executive window are:

ATTRIB	EDLIN	FORMAT*	RESTORE
BACKUP	EXE2BIN	LABEL	SUBST
COMMAND	FC	LINK	SYS*
DEBUG	FDISK	NET	
DISKCOPY	FIND	PERMIT	

Running an MS-DOS Operating System Program

To use an MS-DOS command in MS-Windows with COMMAND.COM:

1. Select the Run command from the File menu in the MS-DOS Executive window.
2. In the dialog box, type:

   ```
   COMMAND
   ```

3. Click on the Ok command button.

   The MS-DOS command processor starts in a window titled "Command."

4. Type the MS-DOS command and any command arguments at the MS-DOS prompt.
5. To exit the MS-DOS command processor, type:

   ```
   EXIT
   ```

   The window title is now enclosed in parentheses.

6. Close the window.

To run an MS-DOS command from the MS-DOS Executive window:

1. Select the RUN command from the File menu.
2. Type the command name and its arguments in the dialog box.
3. Close the window.

If the application does not stop automatically, type the Exit command and then close the window.

Finishing an MS-Windows Session

To finish an MS-Windows session:

1. Save all files you have worked on.
2. Exit from any standard application still running in a window or as an icon.
3. From the MS-DOS Executive window, end your MS-Windows session by using one of the following methods:
   - Double-click on the System menu box.
   - Select the Close command from the System menu.
   - Select the End Session command from the Special menu.

   With either method, a dialog box is displayed, indicating that this action ends your MS-Windows session.
4. Click on the Ok command button.

   MS-Windows closes, and the MS-DOS operating system prompt is displayed on the screen. You can now do one of the following:
   - Turn off your workstation and remove your key diskette if you do not want anyone else to access your files.
   - Enter MS-DOS commands or restart MS-Windows from the MS-DOS operating system prompt by typing:

     `WIN` |Return|

If you try to close MS-Windows while an MS-Windows application such as Notepad is still running, MS-Windows displays a dialog box and lets you save the updated data file.

If you try to close MS-Windows while a standard application is still running, MS-Windows displays a dialog box indicating an application is still running. The name of the active application is displayed in the title bar of the dialog box. Close the application, then close MS-Windows.

Chapter 4
Working with Files

This chapter describes how to use the MS-DOS Executive window to:

- Use files
- Select files
- Copy files
- Delete files
- Print files
- Rename files
- Get information about files

This chapter describes how to work with the file names listed in the MS-DOS Executive window.

Using Files

Your workstation stores information on a disk in files. Each file has a name, usually assigned by you. A file can contain a document, an application, a program you have written, or coded information for use by an application.

Files in MS-Windows use MS-DOS file-naming conventions. For more information, see the *MS-DOS Reference Guide*.

Selecting Files

When you work with MS-Windows, you must select the file that the next command or action affects. The selected file is highlighted.

With MS-Windows you can select:

- One file
- Multiple files

Selecting a File

To select a file, click on the file name you want.

To cancel the selected file:

1. Press and hold down the Shift key.
2. Click on the highlighted file name.

   The highlight is removed from the file name.

Selecting Multiple Files

To select multiple files:

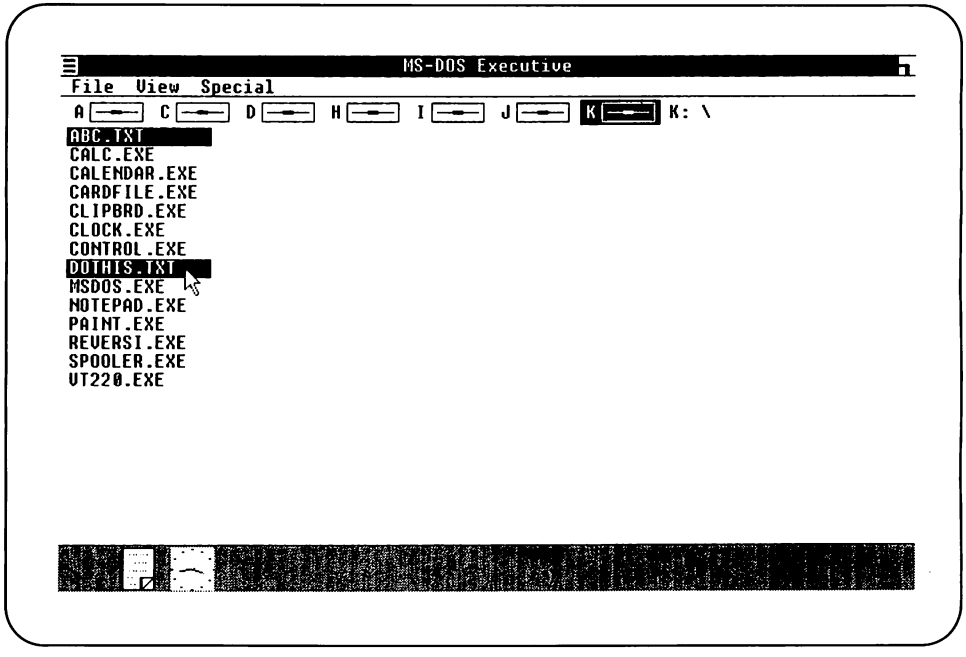
1. Click on the first file name you want to select.
2. Hold down the Shift key.
3. Click on each additional file name you want to select.

   If you select a file name by mistake, you can cancel the selection by clicking on it again while still holding down the Shift key.
4. After you select all the files you want, release the Shift key.

   If you release the Shift key and click on a file name, the file name you selected is highlighted, and all the highlighted files are no longer selected.

Figure 4–1 shows a group of selected files.

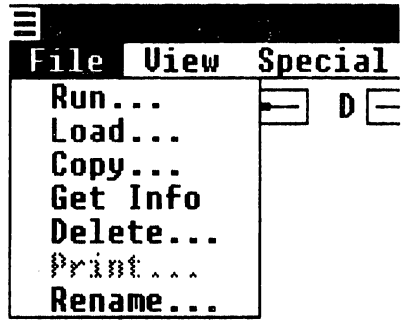
Figure 4–1: Selecting Multiple Files



Using the File Menu Commands

The File menu of the MS-DOS Executive window contains commands that affect a file. The Run and Load commands are described in Chapter 3. Figure 4–2 shows the File menu commands.

Figure 4–2: File Menu Commands



NOTE

For applications that have an Open command in the File menu, there is usually a [..] in the list box. This [..] represents the directory above the current directory and indicates that the current directory is a subdirectory. To move to the higher-level directory, in the File name text entry field, type:

..

If the drive is on a VAX/VMS server, the [..] is not displayed.

Copying Files

To copy an existing file, use the Copy command. You can use this command to copy:

- An existing file into another directory
- A file with a new name

You can copy both single and multiple files.

Copying One File

To copy one file:

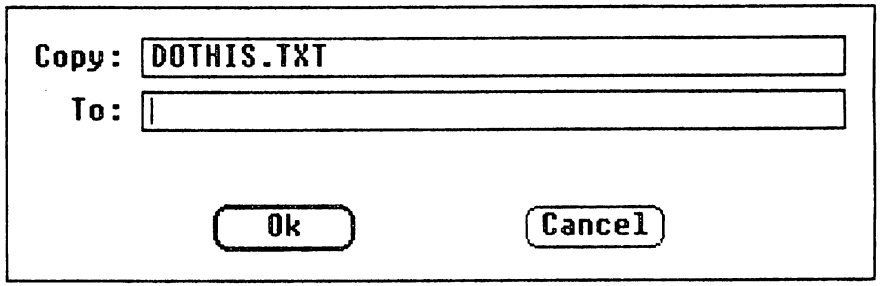
1. Click on the file name you want to copy.

   The file name is highlighted.

2. Select the Copy command from the File menu.

MS-Windows displays the Copy dialog box. Figure 4-3 shows the Copy Command dialog box.

Figure 4-3: Copy Command Dialog Box



The file name you selected is in the Copy text box, indicating that the file is the source file you want to copy from.

3. In the To text box, type the new file name, including the new drive and directory if applicable.
4. Click on the Ok command button.

   A message is displayed at the bottom of the Copy dialog box, indicating that the file you selected is being copied.

   MS-Windows takes a few seconds to create the new file with the specified name. After MS-Windows creates the new file, the dialog box is removed from the window.

   The MS-DOS Executive window then displays a new list of file names, including the new file you created.

Copying More Than One File

To copy several files at the same time to another directory or drive:

1. Select all the file names you want to copy.
2. Select the Copy command from the File menu.

   MS-Windows displays the Copy dialog box, containing all the selected file names.

   If the file name is not listed in the dialog box, type the correct one, including any file extension.

3. In the To text box, type the drive and directory to which you want the files copied.

   NOTE
   You cannot copy more than one file to a single file. (Use the MS-DOS operating system to concatenate files.) However, you can copy multiple files to a drive or an existing directory.

4. Click on the Ok command button.

Deleting Files

To delete files that are no longer useful and to make space for other files, select the Delete command. When you delete a file, MS-Windows removes it permanently from the disk.

Deleting One File

To delete a file from the File menu:

1. Click on the file name you want to delete.
2. Select the Delete command from the File menu.

   MS-Windows displays the Delete dialog box, containing the name of the selected file.

   If the file name is not the one you want to delete, type the correct file name over the one displayed. You must type the entire file name, including any file extension.

3. Click on the Ok command button.

Deleting More Than One File

To delete more than one file at a time, select all the files you want to delete, then follow steps 2 and 3 in the previous section.

Printing a Text File

To print text files, select the Print command from the File menu. With the Print command, you can print any files you can display on your screen.

> **NOTE**
> Most applications have a command that prints files you create with that application. You should use the application command when possible.

To print a file:

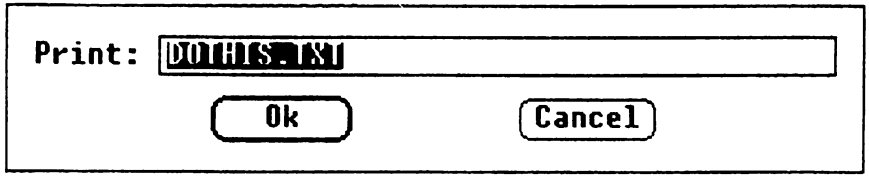
1. Click on the file name of the text file you want to print.

   The file name you selected is highlighted.

2. Select the Print command from the File menu.

   MS-Windows displays the Print dialog box. Figure 4–4 shows the Print dialog box.

Figure 4–4: Print Dialog Box

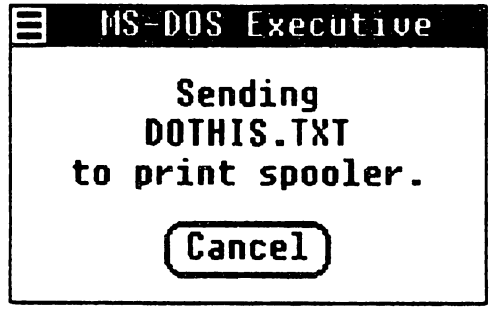


   If the file name is not the one you want to print, type the correct file name over the one displayed. You must type the entire file name, including any file extension.

3. Click on the Ok command button.

   The MS-DOS Executive window displays the Print Spooler dialog box, telling you the file is being sent to the Spooler for the default printer. Figure 4–5 shows the Print Spooler dialog box.

Figure 4-5: Print Spooler Dialog Box



NOTE

Printing does not start until the file has been sent to the Spooler. The length of the delay before the printer starts depends on the complexity and the length of the file you are printing and the number of files already waiting in the print queue.

For more information about the default printer and how to select it see Chapter 8.

To cancel the print request, click on the Cancel command button.

Using the Spooler

The MS-Windows *Spooler* is an application that stores files waiting to be printed. When you run the Print command from the MS-DOS Executive or from a Desktop application:

- The Spooler application starts.
- The Spooler icon is displayed in the icon area.
- A file is sent to the Spooler application.
- The Spooler starts to print the file on your printer, if no other files are printing.

The Spooler application works in the background; therefore, you do not have to wait while your file prints. You can perform another task or work with another application while the Spooler prints your file.

If you expand the Spooler icon in the work area, the Spooler window lists:

- The file names in the order they are to be printed

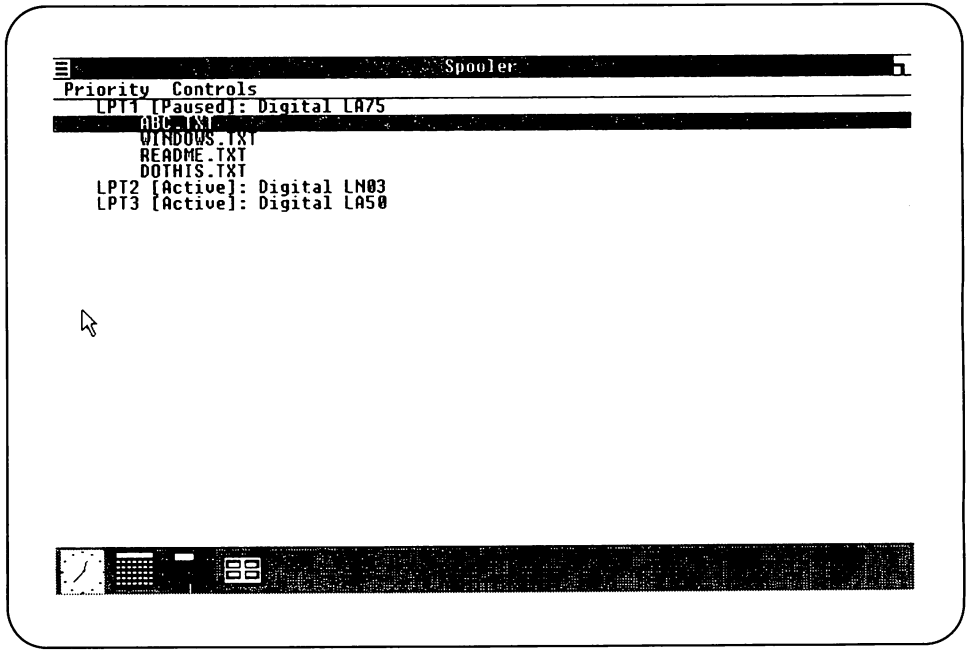
  This listing is called a *print queue*. The first file name in the print queue is the one that is currently printing.

  The Spooler prints the files one at a time, in the order they are listed. If the listing scrolls off the bottom of your window, use the vertical scroll bar to see the entire list.

- The printers installed on the workstation

Figure 4–6 shows the Spooler window.

Figure 4–6: Print Spooler Window with Print Queue



The Spooler application has two menus:

- Priority
- Control

Priority Menu Commands

The Priority menu commands specify how fast you want to print your work. These commands change the rate of data transfer from the Spooler to the printer ports.

To specify how fast to print:

1. To print faster, select the High command from the Priority menu.

   This setting uses more resources of your workstation for printing. The system slows down, and other applications you are using run more slowly.

2. To print slower, select the Low command from the Priority menu.

   This setting allows the other applications you are working with more resources of your workstation.

   The check mark in the menu shows the current setting. Low is the default setting.

Control Menu Commands

The Control menu commands interrupt or cancel a print job.

To interrupt a print job (to change a ribbon, for example):

1. Select the Pause command to interrupt printing.

   The status of the printer changes to Paused in the Spooler window, and the printer stops printing.

2. To continue printing the file, select the Resume command.

To cancel a print job:

1. In the Spooler window, click on the file name of the job you want to cancel.
2. Select the Terminate command.

   MS-Windows displays the Terminate dialog box.

3. Confirm the cancellation.
4. Click on the Ok command button.

The file name you selected is removed from the print queue.

NOTE

If you cancel a job while it is printing in graphics mode, you may need to reset your printer by turning it off and then on again to ensure the buffer is cleared. For more information on resetting your buffer, see your printer documentation.

The Spooler application sometimes displays information about the status of your printing jobs. For example, the printer may be out of paper. If the Spooler needs to display information, but the window or icon is not selected, the title bar or icon flashes. Select the Spooler window or icon to display the message.

Renaming a File

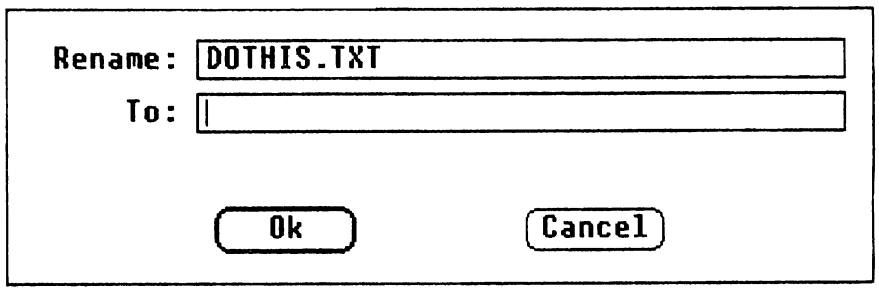
To change the name of a file, use the Rename command.

To rename a file:

1. Click on the file name you want to rename.
2. Select the Rename command from the File menu.

   MS-Windows displays the Rename dialog box. Figure 4–7 shows the Rename dialog box.

Figure 4–7: Rename Dialog Box



If the file name is not the one you want to rename, type the correct file name over the one displayed. You must type the entire file name, including any file extension.

3. In the To text box, type the new file name.
4. Click on the Ok command button.

Getting Information About Files

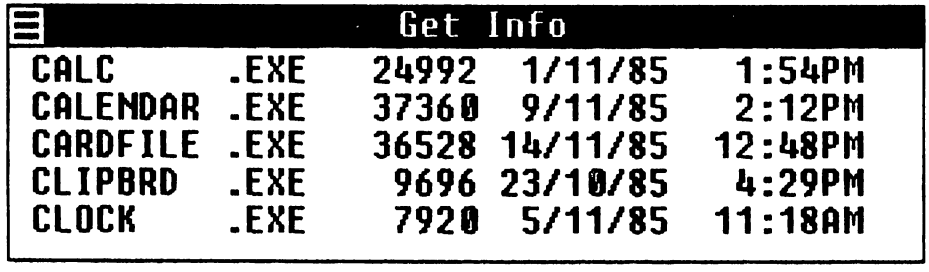
To get more information about a particular file or group of files, use the Get Info command.

To get information about a file:

1. Click on the file names for which you want information.
2. Select the Get Info command from the File menu.

   MS-Windows displays the Get Info dialog box, containing the file names, size in bytes, and the date and time it was created or last changed. (You may need to scroll to see all the information in the dialog box.) Figure 4-8 shows the Get Info dialog box.

Figure 4-8: Get Info Dialog Box



3. After you finish looking at the Get Info dialog box, close it by either of the following:
   - Select the Close command from the System menu.
   - Double-click on the System menu box.

Chapter 5
Working with Directories and Disks

This chapter describes how to use the MS-DOS Executive window to:

- Work with directories
- Work with disks

Working with Directories

A *directory* lists a group of files stored on a disk. Each directory also briefly catalogs the group of files it contains. A directory contains information, such as the name, size, type of file, and date of entry, of all its files. You can also have subdirectories within directories.

Directory names are displayed at the beginning of the directory listing in the MS-DOS Executive window.

When the listing is in the short form, directory names are displayed in bold letters. When the listing is in the long form, directory names are listed with <DIR> to the right of each directory name.

The name of the *current directory* (the one you are in now) is the directory name farthest to the right in the path name at the top of the MS-DOS Executive window.

For more information about directory structures, path names, and disks, see the *MS-DOS Reference Guide*.

Changing Directories

You can change directories or subdirectories to see what is in another directory and to work with the files in another directory. The path name at the top of the MS-DOS Executive window always shows your location in the directory structure.

To change directories, use:

- The Change Directory command
- The path name
- The Word Char key

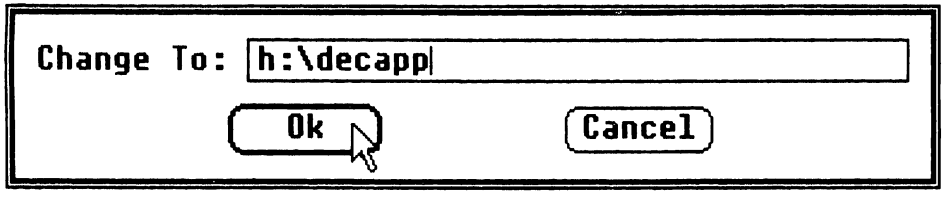
Using the Change Directory Command

To change directories:

1. Select the Change Directory command from the Special menu.

   MS-Windows displays the Change Directory dialog box. Figure 5-1 shows the Change Directory dialog box.

Figure 5-1: Change Directory Dialog Box



2. Type the path name of the directory to which you want to change.
3. Click on the Ok command button. The directory you selected is displayed in the MS-DOS Executive window.

Using the Path Name

To change directories:

1. Click on the directory in the path name to which you want to change.

   MS-Windows displays the Change Directory dialog box. The path name of the directory you selected is displayed in the text box.

2. To change to a directory other than the one displayed in the text box, type the path name of the directory to which you want to change.

3. Click on the Ok command button.

   The directory you selected is displayed in the MS-DOS Executive window.

Using the Word Char Key

To change directories only when you want to go to the next higher directory (the directory immediately to the left of the current directory in the path name), press the Word Char key.

With this method, no matter where you are or what you have selected in the MS-DOS Executive window, the next higher directory (if one exists) is displayed in the MS-DOS Executive window.

To change to a lower directory using the keyboard, highlight the name of the directory to which you want to go and press the Return key.

Creating Directories

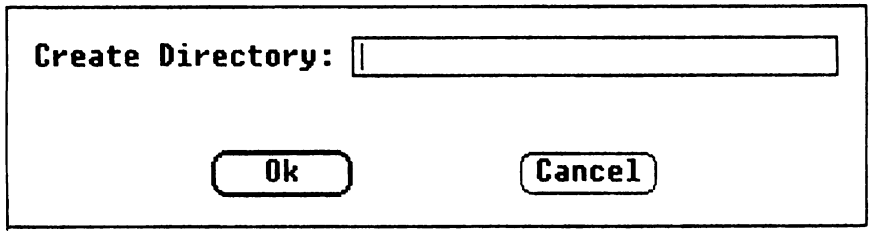
To create a new directory or subdirectory to organize files, use the Create Directory command. You must create a directory before you can put files
in it.

To create a new directory:

1. Select the Create Directory command from the Special menu.

   MS-Windows displays the Create Directory dialog box. Figure 5-2 shows the Create Directory dialog box.

Figure 5–2: Create Directory Dialog Box



2. Type the name of the new directory or subdirectory.
3. Click on the Ok command button.

   A new directory, with the name you entered, is created. The new directory name is displayed in the MS-DOS Executive window.

After you create a directory, you can copy files into it using the Copy command from the File menu. You can also use an application to create new files for the directory.

Changing How File Names Are Listed

The View menu commands change how file names are listed in the MS-DOS Executive window.

When you first start MS-Windows, the files in the MS-DOS Executive window are listed in alphabetical order. The directory names are at the top of the list.

However, you can list files in a different order, such as by size or by the date they were created or changed. You can also list files having the same file extension.

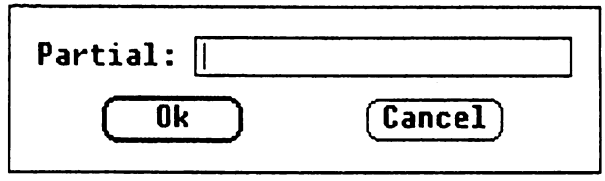
To see only files having the same file extension, you must first use the Partial command to specify the type of files you want to view.

To view a partial list of files:

1. Select the Partial command from the View menu.

   MS-Windows displays the Partial dialog box. Figure 5–3 shows the Partial dialog box.

Figure 5–3: Partial Dialog Box



2. In the text box, type the file names you want to see.

   Use wildcard characters (* or ?) to specify the kind of file you want to display. For example, to display all file names with the file extension .EXE, in the text box, type:

   ```
   *.EXE
   ```

3. Click on the Ok command button.

Displaying Multiple Directories

Because you can display more than one MS-DOS Executive window at a time, you can display two different directories at the same time, one directory in each MS-DOS Executive window.

> **NOTE**
> If you copy or delete files in one directory, there is no change to the directory in the inactive MS-DOS Executive window.

To display a second MS-DOS Executive window:

1. Use the Run command to open the second MS-DOS Executive window.

   The file name is MSDOS.EXE.

2. In the new MS-DOS Executive window, double-click on the directory path name you want to display.

   The selected directory is displayed in the second MS-DOS Executive window.

If you display the same directory in multiple windows, only the directory in the active window is updated when you create, delete, rename, or copy a file. To update the listing in an inactive window, move the mouse to that window and click on the highlighted drive icon.

Printing a Directory Listing

To print a directory listing, use the Print command. The directory listing is printed as it is displayed in the MS-DOS Executive window.

To print a directory listing:

1. Click on the directory name.
2. Select the Print command from the File menu.

   MS-Windows displays the Print dialog box.
3. Click on the Ok command button.

   The listing of the selected directory is printed.

To print the current directory or a directory that is not currently listed:

1. Select the Print command from the File menu.

   MS-Windows displays the Print dialog box.
2. In the text box, type the directory specification.
3. Click on the Ok command button.

   The listing of the specified directory is printed.

Deleting a Directory

To delete a directory, use the Delete command. Before you can delete a directory permanently, you must first delete all the files in the directory. MS-Windows does not let you delete a directory containing files. This protects you from losing files if you try to delete a directory that is not empty.

To delete a directory:

1. Make the directory to be deleted the current directory.
2. Select all the file names in the directory.
3. Select the Delete command from the File menu to delete them.
4. Move to the parent directory.
5. Select the directory name and select the Delete command from the File menu.

   The selected directory is deleted permanently from the disk.

Working with Disks and Diskettes

You can use the MS-DOS Executive window to:

- Prepare diskettes for storing data
- Name a diskette
- Display the contents of a disk

These examples describe working with diskettes. If you want to work with a virtual disk, you must first be connected to the virtual disk.

Preparing a Diskette for Storing Data

Before you can use a diskette, you must prepare it as a data diskette or a system diskette. A data diskette is a blank formatted diskette for storing data. A system diskette contains the files necessary for starting the MS-DOS operating system. You cannot format hard disks with MS-Windows. For more information on formatting a hard disk, see the *MS-DOS Reference Guide* or the DOS reference manual that comes with your DOS software.

To prepare a diskette so it can be used on your workstation, use the Format Data Disk command.

Preparing a Data Diskette

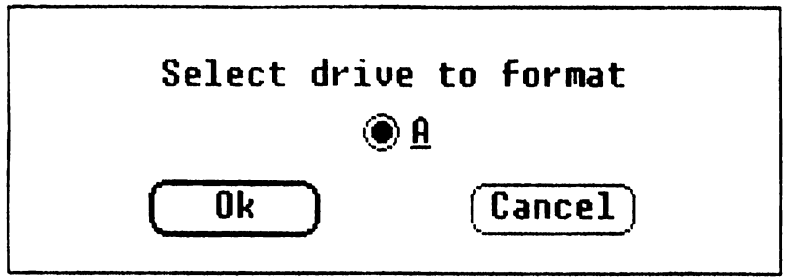
To make a data diskette:

1. Insert the new diskette in the disk drive of your workstation.
2. Select the Format Data Disk command from the Special menu.

   MS-Windows displays the Format Data Disk dialog box. Figure 5-4 shows the Format Data Disk dialog box.
3. Click on the option button of the disk drive containing the new diskette.
4. Click on the Ok command button.

   The system displays a warning that any data on the diskette in the drive will be destroyed.
5. Click on the Ok command button to continue or click on the Cancel command button to stop.

Figure 5–4: Format Data Disk Dialog Box



The Format Data Disk command in the MS-DOS Executive Special menu always formats to the highest capacity of the drive.

To format diskettes of any densities, use the FORMAT command in the MS-DOS Executive File menu Run option. Respond to the prompts with the appropriate parameters. For more information on the FORMAT command, see the *MS-DOS Reference Guide* or the DOS reference manual that comes with your DOS software.

Preparing a System Diskette

A system diskette contains the files necessary for starting the MS-DOS operating system.

To prepare a system diskette:

1. Prepare a diskette by using the Format Data Disk command.
2. Ensure the new diskette is in the disk drive to which you want to copy.
3. Select as your current drive a drive that contains the system files.
4. Select the Make System Disk command from the Special menu.

   MS-Windows displays the Make System Disk dialog box.
5. Click on the option button of the disk drive to which the MS-DOS system files are to be copied.
6. Click on the Ok command button.

Copying starts when you click on the Ok command button. While the MS-DOS system files are being copied, the dialog box remains on the screen and the arrow changes to an hourglass.

When complete, the dialog box is removed from the screen, and the hourglass changes to the arrow.

Naming Disks

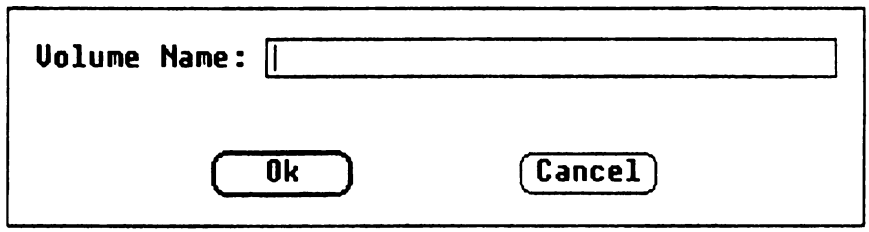
To assign a volume name to a diskette, use the Set Volume Name command. The *volume name* identifies the contents of the disk.

To name a disk:

1. Click on the symbol of the disk drive containing the disk you want to name.
2. Select the Set Volume Name command from the Special menu.

   MS-Windows displays the Volume Name dialog box, containing the current name if any exists. Figure 5-5 shows the Volume Name dialog box.

Figure 5-5: Set Volume Name Dialog Box



3. In the text box, type a name. Only the first twelve characters are accepted.
4. Click on the Ok command button.

   The new volume name for the disk is displayed to the right of the drive letter in the path name.

Displaying the Contents of Another Disk

To display the contents of another disk, click on the symbol of the disk drive you want to display.

The file names of the selected drive are listed in the MS-DOS Executive window. You can change the default directory by selecting a new directory on the drive.

> **CAUTION**
> When you display the contents of another directory or drive, you change the default directory or drive. When you run an application, its default drive and directory become the default drive and directory of the MS-DOS Executive window from which you invoked it. If the new default drive is read-only, you cannot save files, and your application cannot write temporary files to it.

Each copy of the MS-DOS Executive window acts independently of the other, so you can display and work with different directories and drives in each window.

Chapter 6
Using the Keyboard

- Select menus and commands
- Load an application
- Run an application
- Finish an application
- Scroll a window
- Work with files
- Use more than one window
- Print screen images

Keyboard Features

In the previous chapters, you used the mouse to perform the actions available to you in MS-Windows. This chapter describes how to use the keyboard to perform those same actions. Because details about the MS-Windows functions are given in previous chapters, they are not repeated here.

Table 6-1 lists the keys you use most often with MS-Windows. Look at your keyboard and identify the keys listed in Table 6-1.

Table 6–1: MS-Windows Keys

Keys	MS-Windows Function
Alt	Lets MS-Windows know you want to select a command using the keyboard. If you release the Alt key before you press another key, nothing happens. It also modifies the meaning of certain keys used with MS-Windows.
Arrow	Moves the highlight in the menus and in the MS-DOS Executive window in the same direction as the arrow: up, down, right, left.
Alphabet (A–Z)	Moves the highlight in the menus and in the MS-DOS Executive window. For example, when you are in the MS-DOS Executive window and you press the C key, the highlight moves to the first file name beginning with the letter C. If you press the C key again, the highlight moves to the next file name beginning with the letter C, and so on.
Ctrl/Arrow	Moves the cursor without making any selections, such as moving the highlight over the file names in the MS-DOS Executive window.
Ctrl/Break	Selects the Cancel command button in a dialog box.
Return	Runs the selected (highlighted) application file name, or performs the highlighted command in menu. Selects the default command button in a dialog box and overrides any selected command in the dialog box. (See Spacebar)
Esc	Cancels a command if you press it before you press the Return key, or before you click on the Ok command button in a dialog box. Removes a menu or a dialog box from a window. The Esc key is equivalent to the Cancel command button in most dialog boxes.
Spacebar	Selects and cancels selected check boxes. (Toggles check boxes on and off.) Selects the underscored command button in a dialog box; needed to override the default. (See Return)

Table 6–1 (Cont.): MS-Windows Keys

Keys	MS-Windows Function
Alt/spacebar	With the Alt key, the spacebar displays the commands in the System menu.
Shift	Used with the Tab key, the Alt/Tab keys, the arrow keys, or the Return key to change their function, as follows:
Shift/Tab	Used with the Tab key, Shift changes the direction of the cursor movement in a dialog box from left-to-right and top-to-bottom to right-to-left and bottom-to-top.
Alt/Shift/Tab	Used with the Alt/Tab keys, Shift changes the direction of window and icon selection from left-to-right and top-to-bottom to right-to-left and bottom-to-top.
Shift/arrow	Used with the arrow keys, Shift allows multiple selection of file names in the MS-DOS Executive window.
Shift/Return	Used with the Return key, Shift loads into memory the application represented by the highlighted file name in the MS-DOS Executive window and displays its icon in the icon area.
Tab	Moves the cursor between items in a dialog box. Selects an icon, a window, or a dialog box when used with the Alt key.
Word Char	When used in a text box, deletes a character to the left of the insertion point each time it is pressed. When used in the MS-DOS Executive window, changes the current directory to the next higher directory.

Using the Alt Key

The Alt key lets MS-Windows know you want to select a command. You can use the Alt key in several ways:

- If you press the Alt key and release it before you press another key, nothing happens.
- If you hold down the Alt key, select a menu, then release the Alt key before highlighting a command, the menu remains displayed. You can then highlight a command and press the Return key (or the Alt key) to perform the command. To close the menu, press the Esc key.

- If you hold down the Alt key, select a menu, highlight a command, then release the Alt key, MS-Windows performs the command immediately.

The next sections show examples of using the Alt key when working with menus.

Using Menus and Commands

Using the keyboard, you can select menus and commands.

Selecting a Menu

To select a menu with the keyboard:

1. Press and hold the Alt key.
2. Press the spacebar.

   MS-Windows displays the System menu.
3. Release the Alt key.
4. To select another menu, press the right arrow key until the menu you want is selected.

   Each time you press the right arrow key, the next menu to the right is selected, and its commands are displayed. Similarly, if you press the left arrow key, the next menu to the left is selected, and its commands are displayed.

To select a menu, you can also:

1. Press and hold down the Alt key.
2. To display a menu, press the initial letter of the menu name you want. To display the System menu, press the spacebar.

   If more than one menu starts with the same initial letter, use the right or left arrow keys to move from the highlighted menu to the menu you want.

Selecting a Command from a Menu

To select a command from a menu:

1. Press and hold down the Alt key.
2. Press the spacebar.

   MS-Windows displays the System menu.
3. Release the Alt key.
4. To display the commands of another menu, press the right or the left arrow key until the menu you want is displayed.
5. Press the initial letter of the command you want, or press the down arrow key until the highlight moves to the command you want.

   When you press the initial letter of the command, the highlight moves to the first command with the initial letter you pressed. If two commands start with the same letter, press the letter twice to move the highlight to the second command.

   The highlighted command is selected.
6. Press the Return key.

   The command you selected is performed.

   You can cancel a command or remove a menu by pressing the Esc key. However, you must do this before you press the Return key.

To select a command from a menu, you can also:

1. Press and hold down the Alt key.
2. Press the initial letter of the menu you want to select (to display the System menu, press the spacebar). Continue to hold down the Alt key.
3. Press the initial letter of the command you want.

   When you press the initial letter of the command, the highlight moves to the first command with the initial letter you pressed. If two commands start with the same letter, press the letter twice to move the highlight to the second command.

   The highlighted command is selected.

4. Release the Alt key.

   The command you selected is performed.

   You can cancel a command or remove a menu by pressing the Esc key. However, you must do this before you release the Alt key.

Loading an Application

To load an application as an icon using the keyboard, use:

- The Load command
- The file name

Using the Load Command

To load an application using the Load command:

1. Select the Load command from the File menu.

   MS-Windows displays the Load dialog box.

2. In the dialog box, type the file name of the application you want to load.

   Also type any additional information needed, such as path name or program parameters.

3. Select the Ok command button by pressing the Return key.

   The application you select loads as an icon in the icon area.

Using the File Name

To load an application using the file name:

1. Press the up arrow or down arrow key until the file name of the application you want is highlighted.
2. Press and hold down the Shift key.
3. Press the Return key.

   The selected application loads as an icon in the icon area.

Running an Application

To run an application in a window using the keyboard, use:

- The Icon command
- The Move command
- The Run command
- The file name

Using the Icon Command

To expand an icon into the work area using the Icon command:

1. Press and hold down the Alt key.
2. Press the Tab key until the icon you want is highlighted. The name of the application is displayed above the highlighted icon.
3. Press the spacebar.
4. Release the Alt key.
5. Select the Icon command from the System menu, and press the Return key. The icon you selected expands into a window in the work area.

When you use the Icon command, you have little control over exactly where the icon expands into a window in the work area. Where it expands depends on how many windows are already in the work area and the arrangement of those windows. To control where the icon expands into a window in the work area, use the Move command.

Using the Move Command

The Move command provides more control over where the icon expands into the work area.

To expand an icon into the work area using the Move command:

1. Press and hold down the Alt key.
2. Press the Tab key until the icon you want is highlighted, indicating it is selected.
3. Press the spacebar.
4. Release the Alt key.

5. Select the Move command from the System menu, and press the Return key. The icon you selected is displayed in the work area above the icon area.
6. Press the arrow keys until the icon is where you want the window to be displayed.
7. To complete the move, press the Return key. The window expands where you positioned its icon.

Using the Run Command

To run an application using the Run command:

1. Select the Run command from the File menu.

   MS-Windows displays the Run dialog box.

2. In the dialog box, type the file name of the application you want to run.

   Also type any additional information needed, such as path name or command line argument.

3. Select the Ok command button by pressing the Return key.

   The application you select runs in a window.

Using the File Name

To run an application using the file name in the MS-DOS Executive window:

1. Press the up arrow or down arrow key until the application file name is highlighted.
2. Press the Return key.

   The selected application is displayed in the work area, replacing the MS-DOS Executive window.

Finishing an Application

When you finish using an application in the work area, you can remove it by using the Icon command or the Close command. If you use the Icon command, the application continues to run, but it is in the icon area. However, if you use the Close command, the application is removed from the work area, stops running, and is removed from memory, but the application remains on the disk.

Shrinking an Application to an Icon

To remove an application temporarily from the work area, use the Icon command to shrink the application to an icon in the icon area.

To shrink an application to an icon:

1. Press and hold down the Alt key.
2. Press the Tab key until the application you want is highlighted.
3. Press the spacebar, but continue to hold down the Alt key.
4. Select the Icon command from the System menu.
5. Release the Alt key.

   The window you selected shrinks to an icon in the icon area.

Closing an Application

When you finish using an application and want to remove it from memory, use the Close command.

To close an application:

1. Press and hold down the Alt key.
2. Press the Tab key until the application you want is highlighted.
3. Press the spacebar, but continue to hold down the Alt key.
4. Select the Close command from the System menu.
5. Release the Alt key.

   The window you selected closes, the application is removed from memory, but the application remains on the disk.

Using a Dialog Box

To supply information to a dialog box, you move the cursor to items in the dialog box. The flashing underscore shows the location of the cursor, and identifies the active component in the dialog box. Table 6-2 describes the keyboard procedures for moving the cursor in a dialog box.

Table 6–2: Moving the Cursor in a Dialog Box

To move the cursor...	Press...
In the dialog box	Tab key or Shift/Tab keys
In a group of check boxes	Arrow keys, Tab key, or Shift/Tab keys
In a group of option buttons	Arrow keys
(Insertion point) in a text box	Arrow keys
From the text box to the list box	Tab key
In a list box	Arrow keys

Selecting Options in a Dialog Box

To select an option in a dialog box with the keyboard:

1. Move the cursor to the option you want to select, such as the check box, option button, or command button, as explained in Table 6-2.
2. Press the spacebar.

   The option is selected.

Selecting Command Buttons in a Dialog Box

There are alternative ways to select the default command button (usually the Ok command button) and the Cancel command button. The default commands buttons have bold borders.

To select the default command button in a dialog box, press the Return key.

MS-Windows performs the default command and removes the dialog box from the window.

To select other command buttons, press the Tab key to move to the desired button. An underline is displayed under the selected button. To use the command button, press the spacebar.

To select the Cancel option in a dialog box, press Ctrl/Break.

The command represented by the dialog box is canceled, and the dialog box is removed from the window.

Closing a Dialog Box

You usually do not have to close a dialog box, because it is removed when you select the Ok or Cancel command button. However, if a dialog box has no Ok or Cancel command button and has a System menu box in the title bar, you can use the Close command of the System menu to close the dialog box. You can also use the Esc key to close most dialog boxes.

Scrolling a Window

How an application scrolls using the keyboard depends on the application.

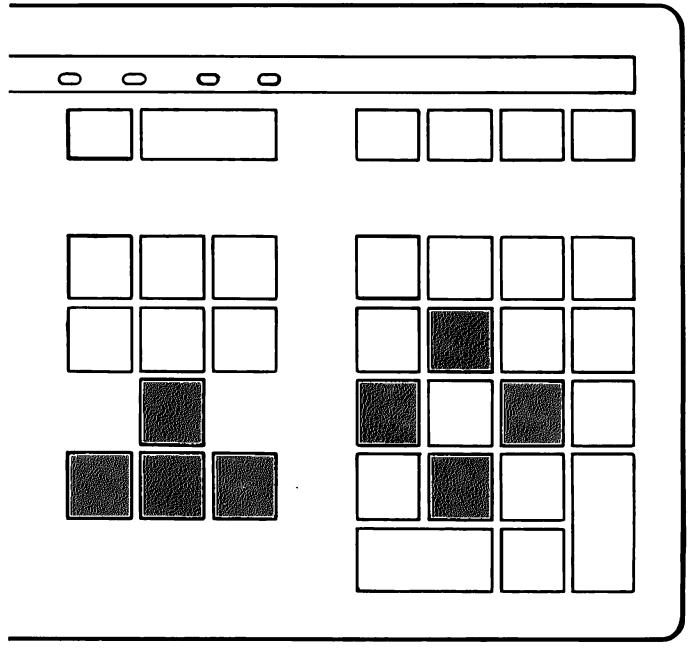
You can also use the keyboard to scroll in the MS-DOS Executive window. When you scroll in the MS-DOS Executive window, you move the highlight from one file name to another.

Figure 6–1 shows the two sets of keys you can use for scrolling the MS-DOS Executive window: one set in the cursor keypad, and one set in the numeric keypad. The keys in the numeric keypad are available only when the Num Lock feature is not selected (the Num Lock light is off). Table 6-3 describes scrolling the MS-DOS Executive window with the keyboard.

Table 6–3: Keyboard Scrolling in the MS-DOS Executive Window

To scroll ...	Press...
Down one file name	Down arrow key
Up one file name	Up arrow key
Right one file name	Right arrow key
Left one file name	Left arrow key
Down one page in the directory	Pg Dn key
Up one page in the directory	Pg Up key

Figure 6–1: Keys Used for Scrolling



Working with Files

Selecting Files

You can select:

- One file
- A block of files
- Scattered files

Selecting One File

To select a file in the MS-DOS Executive window, use:

- Arrow keys

  Press the arrow keys until the file name you want is highlighted.

- Alphabet keys

  Press the first letter of a file name.

  The highlighted file name is selected.

  For example, if you press S, the first file name beginning with S is highlighted. Press S again to highlight the second file name beginning with S, and so on.

  If no more files begin with the letter, the last file remains selected.

Canceling One Selected File

To cancel a selected file with the keyboard, press the spacebar.

The highlight changes to an underscore, showing the file is no longer selected.

If you press the spacebar again, the file becomes selected again.

Selecting a Block of Files

To select a block of files:

1. Press the down arrow key until the first file you want is highlighted.
2. Press and hold down the Shift key.

3. To select other files, move the highlight by pressing the arrow keys.

   The file names are selected as the highlight moves across them.

4. Release the Shift key after you select all the files you want.

   All the file names you selected are highlighted.

Selecting Scattered Files

To select scattered files:

1. Press the down arrow key until the first file you want is highlighted.
2. Press and hold down the Ctrl key.
3. To move the underscore across files you do not want to select, continue to hold down the Ctrl key, and press the arrow keys, until the underscore is under the next file you do want to select.
4. Press the spacebar.

   The highlighted file is selected.

5. Select all the files you want by repeating steps 3 and 4.
6. After you select all the files you want, release the Ctrl key.

   All the file names you selected are highlighted.

Using More Than One Window

You can display more than one window at a time, but only one window can be the active window.

Switching Windows

To switch to another window:

1. Press and hold down the Alt key.
2. Press the Tab key until the title bar of window you want to switch to is highlighted.

   Each time you press the Tab key, the title bar of the next window or icon, from top-to-bottom and left-to-right, is highlighted.

3. Release the Alt key and the Tab key.

The window you switched to is now the active window. Any commands you select or any other information you enter with the mouse or the keyboard affect that window.

You can reverse the direction the highlight moves if you type the Shift/Alt/Tab sequence. You can move the highlight from bottom-to-top and right-to-left if you press and hold down the Shift key before you press the Tab key.

Changing the Size of a Window

You can change the size of a window using commands from the System menu.

Making a Window Larger or Smaller

To make a window larger or smaller:

1. Switch to the window you want to make larger or smaller.
2. Select the Size command from the System menu.

   The cursor changes to the size box.
3. Move the size box to the window border by pressing the arrow keys.

   Continue pressing the arrow keys to move beyond the window border to the size you want. A line shows where the new window's border is located.

   To make the window smaller, you must move the size box beyond the window border and back inside the window border.
4. Press the Return key.

   MS-Windows changes the size of the window and adjusts the size of any adjacent windows.

Making a Window Fill the Entire Screen

To zoom a window so that it fills the entire screen:

1. Switch to the window you want to fill the entire screen.
2. Select the Zoom command from the System menu.

   The window you selected zooms and fills the entire screen including the icon area.

To zoom a window, you can also:

1. Switch to the window you want to fill the entire screen.
2. Press the Alt/Return keys.

   The window you selected zooms and fills the entire screen including the icon area.

To return the window to its former size:

- Use the Zoom command again.
- Press the Alt/Return keys to restore the window to its former size.

Moving a Window

To move a window to another position in the work area:

1. Switch to the window you want to move.
2. Select the Move command from the System menu.

   MS-Windows displays the icon of the application in the middle of the window.
3. Press the arrow keys until the icon is where you want the window to be moved.
4. Press the Return key.

   The window is moved to the position you selected. MS-Windows adjusts the size of the other windows in the work area.

Receiving Messages From Another Application

To see a message sent by another application, switch to the window whose title bar is flashing or to the flashing icon:

1. Hold the Alt key and press the Tab key until the window or icon of the application sending you the message is highlighted.
2. Release the Alt key.

   The message is displayed when you switch to the window or icon of the application sending you the message.

Printing Screen Images

With MS-Windows, you can send the information displayed on the screen to LPT1. To print a screen, the GRAPHICS/R command must be loaded and run before MS-Windows starts. The key diskette runs the GRAPHICS command for you. For more information on the GRAPHICS/R command see the *MS-DOS Reference Guide* or the DOS reference manual that comes with your DOS software.

To print your screen:

1. If you are using a local printer, be sure your printer is attached and on line, and that LPT1 is redirected to your printer.
2. Ensure the screen contains the information you want printed. Everything displayed on the screen is printed.
3. Press Shift/Prt Sc.

   The screen is printed. This operation may take a few minutes.

   NOTE
   Do not press Shift/Prt Sc if LPT1 is being used by another application.

When running a standard application, the following message can display when you try to print the screen from an application:

```
Not enough disk space for screen exchange
```

MS-Windows cannot save the screen image because an error occurred while it was writing the file or because the drive was read only.

Chapter 7
Running Standard Applications

This chapter describes how to:

- Run standard applications in a window
- Run standard applications outside a window
- Transfer information between standard applications
- Run large standard applications
- Run special applications

Working with Standard Applications

A *standard application* is an application (with a .EXE, .BAT, or .COM extension) that you can use with MS-Windows, even though it was not designed for this use. (MS-Windows applications, such as Notepad and Clock, are specifically designed to be used with MS-Windows.)

When you run a standard application with MS-Windows, you continue to use the commands and functions of the application. For many standard applications, MS-Windows lets you run several applications and switch from one application to another.

Many standard applications can run in a window, sharing the work area with other applications in their own windows. However, some standard applications require the entire screen and run outside a window.

Whether a standard application runs in a window depends on how it:

- Uses memory
- Processes input/output (I/O) activities

When an application runs on your workstation, it processes I/O activities that use the workstation resources. These resources include:

- Computer memory
- Communications ports
- Video display screen
- Keyboard

If a standard application uses standard MS-DOS supplied I/O procedures and memory allocation, it can run in a window, because MS-Windows emulates the I/O activities that are compatible for MS-DOS.

If a standard application does not use standard MS-DOS supplied I/O procedures or standard memory allocation, it cannot run in a window, because MS-Windows cannot provide the interface for I/O activities. These standard applications provide their own interface for I/O activities.

> **NOTE**
> Standard applications must run under MS-DOS Version 3.10 or later to run from MS-Windows.

Using Program Information Files

A *program information file* (PIF) contains information about how a standard application uses workstation resources. The system administrator enters this information into a PIF for the standard application, and the information is used by MS-Windows. Each standard application you use should have a PIF associated with it.

Included with your MS-Windows software package are PIFs for many standard applications. If you try to run an application that has no PIF, MS-Windows uses default settings for the resources. However, the system administrator should create a PIF for the application.

An application can have more than one PIF associated with it. For example, you can have two versions of the same application. One version can require a large amount of memory, because you use all the features of the application, while another version can require less memory, because you use only a few features.

Some applications require more than one PIF. Each file with a .EXE, .COM, and .BAT extension that an application runs must have a PIF associated with it.

If you are running a *batch file* (an application with a .BAT extension) that redirects I/O, you must set the Directly Modifies Screen option in the application PIF file and run the batch file from the MS-DOS Executive window. See Appendix B for more information on creating PIFs for standard applications.

> **NOTE**
> You should not run a batch file from a COMMAND.COM window if the file includes redirected I/O or piping.

You can run an application by selecting its PIF in the MS-DOS Executive window. When you select the PIF, MS-Windows loads and runs the application named in the PIF.

Running a Standard Application

You run a standard application that runs in a window as you run MS-Windows applications, such as Calculator and Notepad.

> **NOTE**
> When you run a standard application in a window, the Special light in the top right of the keyboard can turn on and off. This means the keyboard is automatically changing modes according to the needs of the application.

Shrinking a Window

You shrink a standard application that runs in a window as you shrink MS-Windows applications, such as the Information System and Notepad.

Most icons for standard applications are a plain rectangle containing a three-letter abbreviation for the application. However, some applications have custom icons that are graphic representations of the application.

> **NOTE**
> When you drag the icon of any standard application, it becomes a plain rectangle, resembling the Clock icon when it is dragged.

Closing a Window

To close a standard application running in a window:

1. Use the Exit command of the application.

   This ensures a normal ending of operations for the application.

   NOTE
   Standard applications have a Quit command, an End command, or some other command that is equivalent to the Exit command; see your application documentation for using them.

2. Observe and note any information the application displays in the window.

   Some standard applications display information for you to look at or copy. Observe the name of the application displayed in the title bar with parentheses around it, indicating you have successfully exited from the application and it has stopped running.

3. Select the Close command from the System menu.

   The standard application stops running, the window closes, and the standard application is removed from memory.

   An option in the PIF allows a standard application window to close when you exit the standard application. If you include this option in the PIF, the window automatically closes when you use the standard application's exit command. For more information on the Close or Exit option, see Appendix B.

Scrolling a Window

If your standard application runs in a window, MS-Windows adds the Scroll command to the System menu of the application.

To scroll a standard application, you use:

- The Scroll command from the System menu
- The commands and keys built into your standard application

If using the Scroll command, you must use the keyboard to scroll. The Scroll command is independent of the commands already built into your standard application.

The keys you use have two functions: their normal function and their scrolling function. Press the Esc key to use the normal function. Press the Esc key again to use the scrolling function.

If using the built-in commands and keys, use the mouse to scroll. See the application documentation for information on what these commands and keys are.

Table 7-1 shows the keys used for scrolling standard applications that run in a window.

Table 7–1: Scrolling Standard Applications That Run in a Window

To scroll...	Press...
Up one line	Up arrow key
Down one line	Down arrow key
Left one character	Left arrow key
Right one character	Right arrow key
Up one screen	Pg Up key
Down one screen	Pg Dn key
Left one screen	Home key
Right one screen	End key

Finishing an MS-Windows Session

You cannot finish an MS-Windows session while a standard application is still running. You must exit from all standard applications before you can end your MS-Windows session.

If you try to end your MS-Windows session while a standard application is still running, MS-Windows displays a dialog box, showing a message that a standard application is still active. The name of the active standard application is displayed in the title bar of the dialog box. When you see this dialog box, use the Exit command of the application.

Any standard application running as an icon must also be closed before you try to end your MS-Windows session. For each standard application running as an icon, you must expand the icon into a window and use the Exit command of the application.

Running Multiple Standard Applications

You run multiple standard applications the same as MS-Windows applications, such as the Information System and Notepad.

Running Standard Applications Outside a Window

Some standard applications require exclusive use of the screen and cannot run in a window. When you run this kind of application, you no longer see MS-Windows features, such as the title bar, the menu bar, and the icon area.

When you run a standard application outside a window, MS-Windows temporarily removes itself from the screen. You can use the application's commands and functions, but you cannot use all of MS-Windows' functions.

Starting an Application That Runs Outside a Window

You start a standard application that runs outside a window the same as you start other applications. You can:

- Expand the icon
- Select the Run command from the File menu of the MS-DOS Executive window and type the file name and path name, if needed
- Select the file name in the MS-DOS Executive window

When you start a standard application that runs outside a window, it fills the entire screen. Any applications that are displayed on the screen are removed. They return to the screen after you finish the application and return to MS-Windows.

Returning to MS-Windows

To return to MS-Windows from a standard application that runs outside a window, you can use:

- The application's Exit command

  All applications use this method.

- Alt/Tab keys

  Some applications use this method, depending on how they use certain workstation resources, as specified in each standard application's PIF.

For example, the Alt/Tab keys cannot be used to switch windows if the Program Switch option is set to Prevent in the application's PIF. For information on the Program Switch option, see Appendix B.

After you close the standard application, switch to the application that was running previously.

To run the standard application again, expand its icon.

Transferring Information

To transfer information between applications that run in windows, use:

- Added System menu commands:
  - Mark
  - Copy
  - Paste

  These commands are only used with standard applications that run in a window, because only standard applications have a System menu.
- Alt/Prt Sc keys

To transfer information from an application that runs outside a window, use the Alt/Prt Sc keys.

Marking Information to be Transferred

Before you can transfer information, you must mark (select) it, using the mouse or the keyboard.

To use the mouse to mark information:

1. Point to the beginning of the area you want to transfer.
2. Drag the cursor across the area of the window you want to transfer.

   As you drag the cursor across the window, the selected information is highlighted.
3. Release the mouse button.

   The information you want to transfer is now marked.

To use the keyboard to mark information:

1. Select the Mark command from the System menu.

   A rectangular cursor is displayed at the upper-left corner of the window.

2. Press the arrow keys to move the cursor to the beginning of the area you want to transfer.

3. Press and hold down the Shift key.

4. Press the arrow keys to define the area you want to transfer.

   The block of information you marked for transfer is highlighted.

   To cancel the selected area, press the Esc key, or the Return key. This removes the highlighting on the block of information you selected.

5. Release the Shift key.

   The information you want to transfer is now marked.

For example, to select a paragraph:

1. Move the cursor to the first character of the paragraph.

2. Press and hold down the Shift key.

3. Press the right arrow key to go to the end of the line, then press the down arrow key to go to the last line of the paragraph.

4. Release the Shift key.

After you mark the information, you transfer it to the Clipboard using the Copy command.

Copying Information to the Clipboard

You must copy information to the Clipboard before you can transfer it to an application. To transfer marked information to the Clipboard, select the Copy command from the System menu.

The information you marked is copied to Clipboard. You insert this information into another location using the Paste command.

Pasting Information

After the information has been copied to the Clipboard, you can transfer it to another location using the Paste command. You can paste the information to:

- Applications designed to work with MS-Windows

  For example, you can paste text screens to Notepad and graphics screens to MS-Paint.

- Standard applications that run in a window

  You can paste all or part of an application that runs in a window.

When you paste information to a terminal emulator, you must first enable HOSTSYNC under VMS by typing:

```
$ SET TERMINAL/HOSTSYNC Return
```

This command prevents loss of characters due to data overruns.

You cannot paste:

- Information from the Clipboard to an application that runs outside a window
- Graphics information from the Clipboard to any standard application (inside or outside a window)

NOTE

Text is stored in its character (ASCII) representation. When you use the Copy or Paste commands, the text is also transferred in this character representation.

To use the Paste command:

1. Switch to the window into which you want to paste the information.
2. Move the cursor where you want to insert the information.
3. Select the Paste command from the System menu.

   The selected text is inserted in your application at the cursor location.

Using the Prt Sc Key

You can also transfer information to the Clipboard by using the Alt/Prt Sc keys. To copy a standard application's window to the Clipboard:

1. To copy from a standard application that runs in a window, make sure the window is the active window. (Switch to the window you want to copy if it is not the active window.)
2. Press the Alt/Prt Sc keys.

   For a standard application that runs outside a window, the screen contents are copied to the Clipboard. For a standard application that runs in a window, the active window is copied, as if it filled the entire screen, to the Clipboard. Other windows in the work area are not copied.

   A block of information, 80 columns by 25 lines, is transferred from the selected window to the Clipboard, regardless of the number of columns and lines displayed in the window.

After the information has been copied to the Clipboard, you can paste it to other applications with the Paste command.

Running Large Standard Applications

To run multiple standard applications efficiently, run the largest application first.

If you run more than one application and try to run a new application that requires more memory than is available, MS-Windows displays the message "Not enough memory to run."

If you see this message, close an application that you do not currently need and try to run the standard application again.

If you are closing a standard application, you should first use the Exit command of the application.

The application runs after enough memory has been freed by closing other applications. If the MS-DOS Executive window is the only application running, the application you selected runs because MS-Windows and the MS-DOS Executive application step aside and give the application most of the available memory. A small amount of memory is retained for restoring MS-Windows.

When you finish using the large application, close it. After you close the application, the MS-DOS Executive window returns to the work area. Any application defined in the WIN.INI file to load or run is started.

> **NOTE**
> Do not use a large standard application in the WIN.INI file's RUN= line.

Running Special Applications

Some applications remain in memory even after exiting the application. These special applications are sometimes called *memory resident, terminate and stay resident,* or *pop-up* programs.

You must load special applications before you start MS-Windows.

You run special applications from MS-DOS outside MS-Windows. You can also run special applications while using standard applications that both:

- Do not run in a window
- Have Directly Modifies Memory set in their PIFs

You cannot run special applications from COMMAND.COM in MS-Windows.

> **NOTE**
> The PIF for a special application should have the Directly Modifies Memory option enabled. If you then try to run a special application, a system warning displays. Select CANCEL. If you select Ok, the special application can cause system problems.

Some special applications prevent you from switching back to MS-Windows. To return to MS-Windows, stop the special application by using its EXIT command.

Chapter 8
Using the Control Panel

This chapter describes how to use the Control Panel application to:

- Change the date and time
- Change the mouse cursor blink rate
- Change the mouse double-click rate
- Add and remove printers
- Add and delete display fonts
- Change printer ports
- Change the default printer and its output modes
- Change communications ports
- Change network terminal services
- Change screen shades
- Change keyboard settings
- Exchange mouse button functions
- Change country settings

Running the Control Panel

The Control Panel is an application that lets you change the settings for MS-Windows. MS-Windows saves the Control Panel changes you make in the WIN.INI file, which is stored in your personal directory. Each time MS-Windows starts, it uses the settings in the WIN.INI file. For more information on the WIN.INI file, see Appendix A.

To run the Control Panel:

1. In the MS-DOS Executive window, select the Run command from the File menu.

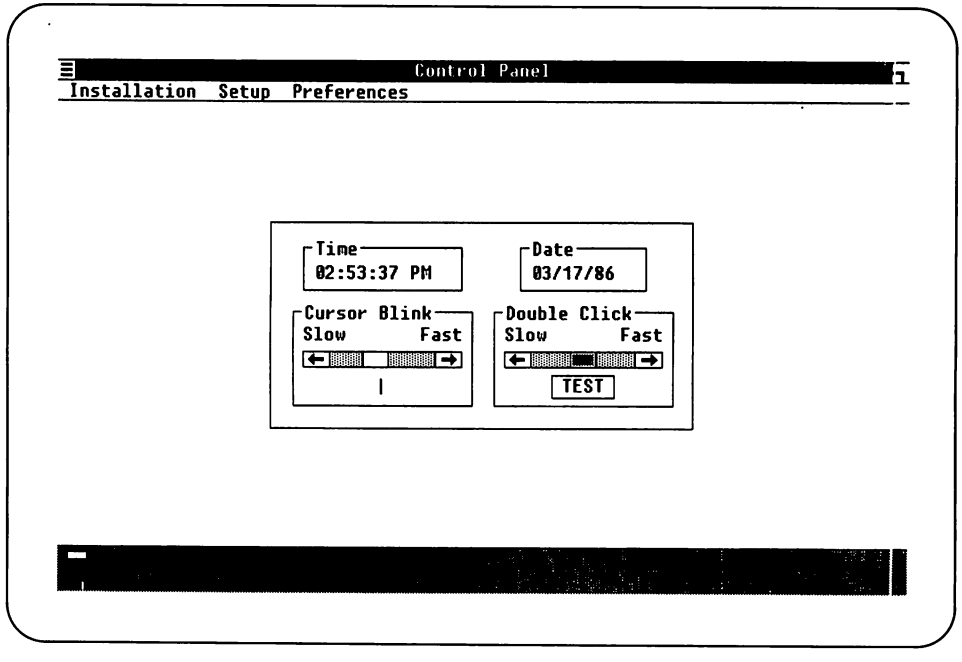
   The MS-DOS Executive window displays the Run command dialog box.

2. In the dialog box, type:

   CONTROL Return

   The MS-DOS Executive window displays the Control Panel window with a dialog box in the window and three menu names in the menu bar. Figure 8-1 shows the Control Panel window.

Figure 8-1: Control Panel Window



Using the Control Panel Dialog Box

The Control Panel dialog box, in the center of the window, lets you change:

- Time
- Date
- Cursor blink rate
- Double-click rate

The three menu names in the menu bar are:

- Installation
- Setup
- Preferences

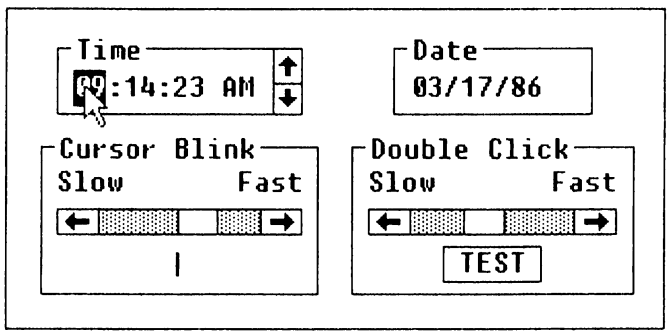
Changing the Time

The time you set from the Control Panel is used in many applications, such as Clock or Calendar.

To change the time using the mouse:

1. Click on the part of the time (hours, minutes, or seconds) you want to change. Figure 8–2 shows changing the time.

Figure 8–2: Changing the Time



The part of the time you selected is highlighted. An up arrow and a down arrow are displayed to the right of the time.

The Clock does not advance while the cursor is on any part of the time display.

2. Click on the up arrow to increase the number; click on the down arrow to decrease the number.

To change the time using the keyboard:

1. Press the Tab key to move the cursor, displayed as an underscore, to the Time section.
2. Press the right arrow and left arrow keys to highlight the part of the time (hour, minutes, or seconds) you want to change.

   The selected time is highlighted. An up arrow and a down arrow are displayed to the right of the time.

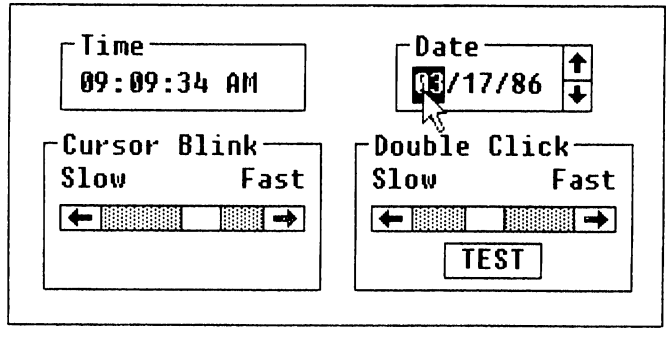
   The Clock does not advance while the cursor is on any part of the time display.
3. Press the up arrow key to increase the number; press the down arrow key to decrease the number.

Changing the Date

You change the date the same way that you change the time.

To change the date with a mouse, click on the part of the date (month, day, or year) you want to change, then use the same procedure as for changing the time. Figure 8–3 shows changing the date.

Figure 8–3: Changing the Date



To change the date with the keyboard, press the Tab key to move the cursor, displayed as an underscore, to the Date section, then use the same procedure as for changing the time.

Changing the Cursor Blink Rate

Some applications have a cursor that blinks. The cursor is usually an underscore or insertion point that blinks. The *blink rate* is the frequency at which the cursor flashes.

To change the cursor blink rate with the mouse, move to the Cursor Blink section and do one of the following:

- Click on the right or left scroll arrow.

  The scroll box moves as you click on an arrow.

- Drag the scroll box within the scroll bar to the right or to the left.

  The vertical cursor below the scroll bar shows the new cursor blink rate. As you scroll, the blink rate of the vertical cursor changes. The farther right you scroll, the faster the cursor blinks. The cursor blink rate stays in effect until you change it again.

To change the cursor blink rate with the keyboard:

1. Press the Tab key to move the cursor to the Cursor Blink section.
2. Press the left arrow or the right arrow key to scroll to the setting you want.

Changing the Mouse Double-Click Rate

You can double-click to use many commands. MS-Windows interprets this action either as a double-click or as two individual clicks, depending on how soon one click follows another. If you do not double-click fast enough, MS-Windows interprets the action as two individual clicks of the left mouse button, instead of a double-click.

To change the mouse double-click rate, do one of the following:

- Click on the right or left scroll arrow in the Double-Click section.
- Drag the scroll box within the scroll bar.

  The farther right you scroll, the faster MS-Windows expects a double-click.

You can test the new double-click setting by double-clicking on the TEST button in the dialog box. If MS-Windows interprets your clicking as a double-click, the TEST button shade changes from dark to light, or from light to dark. If the TEST button shade does not change, try double-clicking faster or reducing the double-click rate.

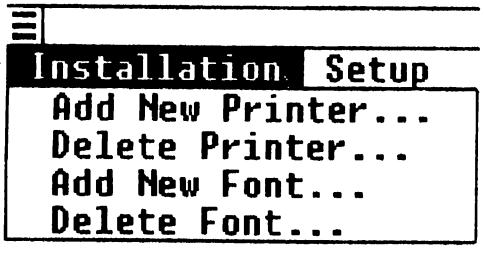
Using the Installation Menu

The Installation menu has four commands:

- Add New Printer—adds a printer to the list of available printers
- Delete Printer—removes a printer from the list of available printers
- Add New Font—adds a font to the list of available fonts
- Delete Font—removes a font from the list of available fonts

Figure 8–4 shows the Installation menu commands.

Figure 8–4: Installation Menu Commands



Adding and Removing a New Printer

To change printer selections, use the Add New Printer and the Delete Printer commands from the Installation Menu.

On the network, you can connect to print servers that generate output in either landscape or portrait mode. Using the Control Panel, you can select the default printer mode: landscape or portrait. The printer mode you select overrides the current mode of the printer.

When you use the Control Panel to add to or remove a printer from MS-Windows, you are adding or removing the printer driver file from the other printer drivers listed in the MS-Windows WIN.INI file. Only printers that list their printer driver files in the WIN.INI file are used by MS-Windows and its applications.

After MS-Windows is set up, you can add a printer driver file to MS-Windows when you want to install:

- An existing printer driver file

  The printer driver file is in the network directory L:\WIN\UTIL, which stores printer driver files.

- A new printer driver file

  The printer driver file is not in the network directory L:\WIN\UTIL. You install the printer driver file by copying it from the distribution diskette of a new application to the network directory L:\WIN\UTIL.

After you add a new printer to your system, you must let MS-Windows know which communications port the printer is connected to before you can use the printer. To define the communications port, use the Connections command in the Setup menu of the Control Panel.

Adding an Existing Printer Driver File

To add an already existing printer driver file to your system:

1. Select the Add New Printer command from the Installation menu.

   MS-Windows displays the Add Printer dialog box. Figure 8-5 shows the Add New Printer dialog box.

2. In the text box, you type the location of the printer driver file, typically:

   ```
   L:\WIN\UTIL
   ```

3. Select the Ok command button.

   MS-Windows displays a dialog box, listing the printers available in the directory you specified.

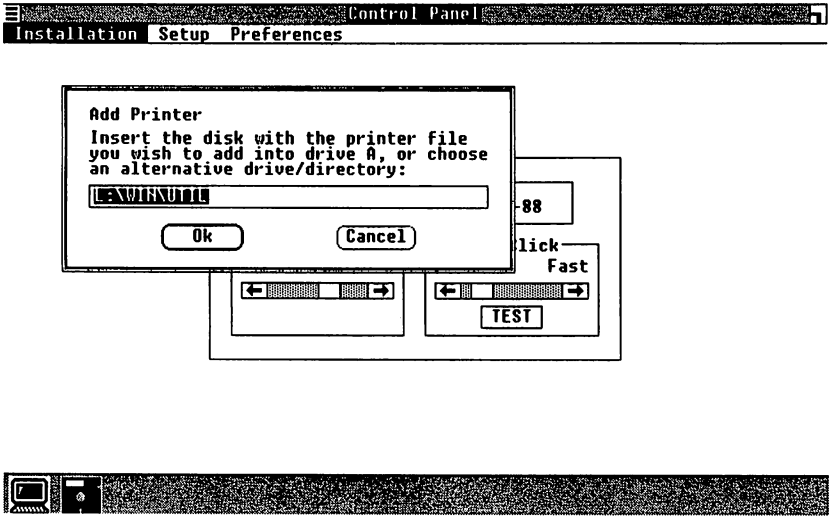
4. From the list box, select a printer.

   The name of the corresponding printer driver file is displayed in the Printer File text box of the dialog box.

   See Table 8-1 for information on selecting printers.

5. Select the Add command button.

Figure 8–5: Add New Printer Dialog Box



MS-Windows displays a dialog box.

6. Select the No command button.

   Selecting the No command button is the normal procedure. However, if you want to duplicate this printer driver file, type the drive or name of an existing directory you want, and select the Yes command button.

   MS-Windows updates the WIN.INI file to include information for the new printer driver. However, only the WIN.INI file used when you start MS-Windows is updated. If the printer is added to the network and is used by more than one user, the WIN.INI of each user needs to be updated.

Table 8–1: Selecting Printers

Printer	Printer Type
LA50	Digital LA50
LA75 Companion	Digital LA75DEC
LA210 Letterprinter	Digital LA210DEC
LN03R	PostScript
PrintServer 40	PostScript
LN03 Plus with or without CG-Times cartridge	Digital LN03PLUS
LN03 Plus with ISO/PC cartridge	Digital LN03DEC
L75 Companion to emulate IBM Proprinter	Digital LA75STD
LN03 Plus with ISO/PC cartridge to emulate IBM Proprinter	Digital LN03STD
LA210 Letterprinter to emulate an IBM Proprinter	Digital LA210STD

Adding a New Printer Driver File

Your system administrator adds new printer driver files from the distribution diskette that comes with a new printer. This section includes information about adding a new printer driver file.

To add a new printer driver file to the directory containing the other MS-Windows printer driver files:

1. Select the Add New Printer command from the Installation menu.

   MS-Windows displays a dialog box that prompts you to insert into Drive A the diskette with the printer driver file you want to add, or to select an alternate drive/directory. It displays L:\WIN\UTIL in the text box. Select Drive A by typing:

   ```
   A:\
   ```

2. Insert the diskette with the printer files.

   See the printer hardware documentation to determine which diskette and which directory contains the printer driver files (.DRV).

3. Select the Ok command button.

   MS-Windows displays a dialog box, listing the printers available on the diskette.

4. From the list box, select a printer.

   After you select a printer, the name of the corresponding printer driver file is displayed in the Printer File text box at the right.

5. Select the Add command button.

   A dialog box prompts you for the name of the drive or directory to which you want to copy the printer driver file.

6. In the text box, type the service name for L:\WIN\UTIL. The drive and directory from which the printer driver file is to be copied. Drive L: must be connected to the read service name for the system files.

7. Select the Yes command button.

   MS-Windows updates the WIN.INI file to include information for the new printer driver. However, only the WIN.INI file used by MS-Windows when you started MS-Windows is updated. If the printer is added to the network, and is used by more than one user, the WIN.INI file of each user needs to be updated.

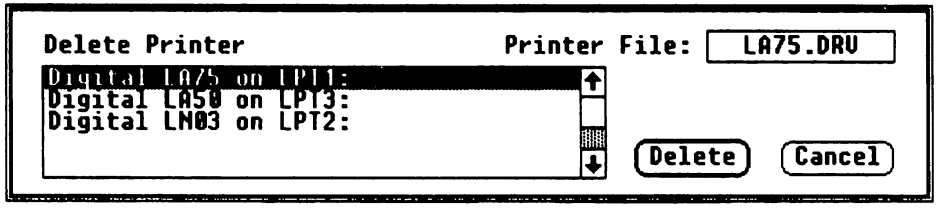
Removing a Printer

To remove a printer from MS-Windows:

1. Select the Delete Printer command from the Installation menu.

   MS-Windows displays the Delete Printer dialog box. The list box shows all the printers currently in your WIN.INI file. Figure 8–6 shows the Delete Printer dialog box.

Figure 8–6: Delete Printer Dialog Box



2. Select the printer you want to remove from the list box.

   The file name of the corresponding printer driver file is displayed in the text box.

3. Select the Delete command button.

   MS-Windows displays a dialog box.

4. Select the No command button.

   NOTE

   When you select the No command button, the printer name is deleted from the WIN.INI file, but the printer driver file remains. By selecting the No command button, you can use the procedure discussed in "Adding an Existing Printer Driver File", because the printer driver is still stored in the directory.

   You should not delete the printer driver file.

Some printer drivers support more than one printer model. In this case, the printers share the print driver file. If other printers share the printer driver file that is displayed in the Delete Printer dialog box, that printer driver file is not deleted, because it is still used by the other printers.

In this case, MS-Windows displays a dialog box, indicating the shared printer driver file is not deleted. However, it is disassociated from the selected printer in the WIN.INI file.

Adding a New Font

To add an MS-Windows font file (.FON) to MS-Windows, use the Add New Font command from the Installation menu.

When you select the Add New Font command (or the Delete Font command), you must specify where the font files are located. MS-Windows lists the available fonts, including the font names, the font sizes, and the set numbers.

The set number is based on the devices that the font is primarily designed to be used with.

Set 1

Set 1 fonts are stroke fonts. They can be used for the screen, a printer, or a plotter device of any resolution.

Set 2

Set 2 fonts are raster fonts. They are designed for a screen resolution of 640 X 200, such as a workstation with the IBM Color Graphics Adapter or compatible adapter card.

Set 3

Set 3 fonts are raster fonts. They are designed for a screen resolution of 640 X 350, such as a workstation with an IBM Color Graphics Adapter or Hercules Graphics Card. These fonts are also used by the VAXmate.

Set 4

Set 4 fonts are raster fonts. They are designed for printers in 60 dots per inch (dpi) resolution:

- LA75, LA210, and LN03 in STD mode (landscape mode)
- Okidata 92, 93, 192, 193, standard models (portrait mode)
- Okidata 92, 93, 192, 193, standard and PC-compatible models (landscape mode)
- IBM Graphics (landscape mode)
- IBM Proprinter (landscape mode)
- Star Micronics SG-10 (landscape mode)

Set 5

Set 5 fonts are raster fonts. They are designed for printers in the 120 dpi resolution:

- LA75, LA210, and LN03 in STD mode (portrait mode)
- Okidata 92, 93, 192, 193, PC-compatible models (portrait mode)
- IBM Graphics (portrait mode)
- IBM Proprinter (portrait mode)
- Star Micronics SG-10 (portrait mode)

In addition to these fonts, an application can list device fonts. These are the fonts provided by a device. For example, on print-wheel printers, font names correspond to wheel names. These fonts cannot be added or deleted with the Control Panel, but they can be listed when the output device is selected. When a raster font does not correspond to the screen, MS-Windows can substitute a screen font in the same class.

NOTE
Because applications handle fonts differently, some applications may not list all fonts.

Fonts have names that represent their different characteristics. Table 8-2 lists and describes the fonts that are included on L:\WIN\UTIL.

Table 8–2: Fonts on the Fonts Disk

Font	Description
Helv	(Raster font.) A proportional font (characters having varying widths) without serifs.
Courier	(Raster font.) A fixed-width font (charters having uniform width) with serifs.
Tms Rmn	(Raster font.) A proportional font with serifs.
Roman	(Stroke font.) A proportional font with serifs.
Modern	(Stroke font.) A proportional font without serifs.
Script	(Stroke font.) A proportional font of slanted characters formed from nearly continuous curved lines.

Table 8-3 describes the fonts that are not included on the L:\WIN\UTIL, but that you can see in some applications. These fonts cannot be added or deleted.

Table 8–3: Fonts Not on the Fonts Disk

Font	Description
System	(Raster font.) A fixed-width font designed for the screen.
Terminal	(Raster font.) A fixed-width font that is the same as the font your workstation displays from MS-DOS.

Deleting a Font

To delete a font file in MS-Windows, use the Delete Font command from the Installation menu.

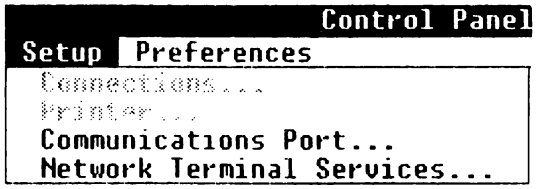
Using the Setup Menu

The Setup menu has four commands:

- Connections, which lets you assign or change printer port connections
- Printer, which lets you select the default printer
- Communications Port, which lets you select a serial communications port and select parameters, such as baud rate, word length, parity, and stop bits
- Network Terminal Services, which lets you select network services for your communication ports

Figure 8–7 shows the Setup menu commands.

Figure 8–7: Setup Menu Commands



Changing Printer Connections

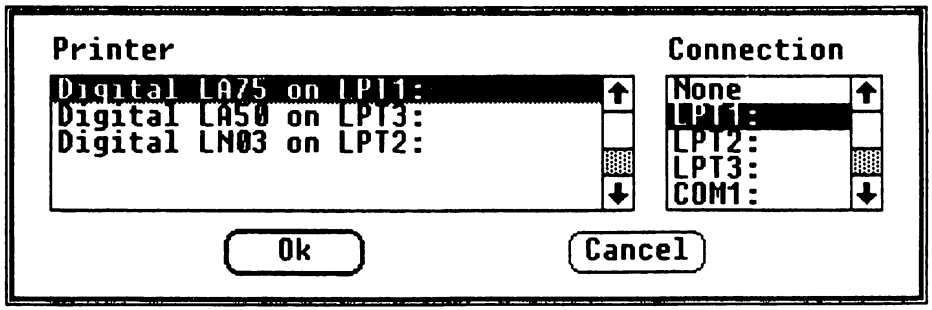
MS-Windows needs to know to which communications port your printer is connected. To set or change the port for your printers, use the Connections command.

For example, to move your printer from the communications port LPT1 to LPT2, use the Control Panel to change the printer connections setting.

To change printer connections:

1. Select the Connections command from the Setup menu. MS-Windows displays the Connections dialog box. Figure 8–8 shows the Connections dialog box.

Figure 8–8: Connections Dialog Box



2. From the Printer list box, select the printer you want to change. The current communications port assignment for the selected printer is displayed in the Connection list box, located at the right.
3. From the Connections list box, select one of the communications ports.
4. Select the Ok command button.

Changing the Default Printer

When you use a Print command, MS-Windows prints the file on the default printer. To select the default printer and to set its output modes, use the Printer command.

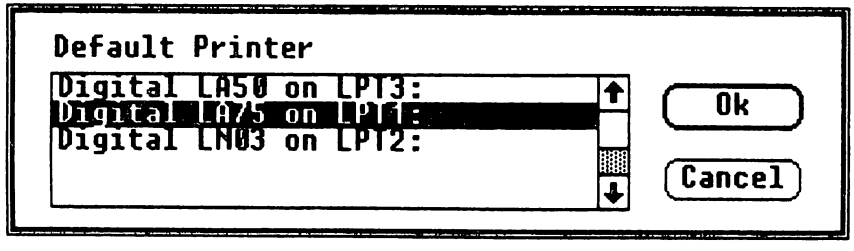
Printer output modes are printer-specific settings, such as portrait mode (normal vertical page orientation) or landscape mode (horizontal page orientation). The Printer command is useful when you have both local and remote printers, or both dot matrix and character printers, connected to your workstation.

To change the default printer:

1. Select the Printer command from the Setup menu.

   MS-Windows displays the Default Printer dialog box. It lists all the available printers and their current connections. Figure 8–9 shows the Default Printer dialog box.

Figure 8–9: Default Printer Dialog Box



2. From the list box, select the printer name.
3. Select the Ok command button.

   MS-Windows displays the Output Mode dialog box, containing the mode settings specific to the printer you selected.

4. To select another output mode, select from the options for printer output or answer the questions in the dialog box.
5. Select the Ok command button.

   The printer you select becomes the default printer.

Changing the Communications Port

To select COM1 and COM2 settings, including baud rate, stop bits, parity, word length, and the retry (print/send) option, use the Communications Port command.

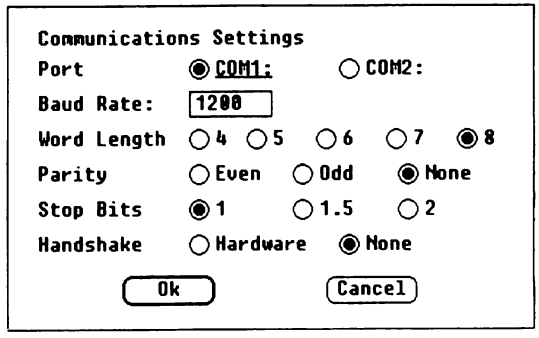
The MS-Windows print spooler uses these settings to configure the communication port before printing. (COM1 and COM2 are serial communications ports and can be used only with serial printers and serial communication devices.) To set the serial printer port, use the MS-DOS MODE command before starting MS-Windows. For more information on the MODE command, see the *MS-DOS Reference Guide* or the DOS reference manual that comes with your DOS software.

To configure a communications port:

1. Select the Communications Port command from the Setup menu.

   MS-Windows displays the Communication Settings dialog box. Figure 8–10 shows the Communications Settings dialog box.

Figure 8–10: Communications Settings Dialog Box



2. Select the communications port COM1 or COM2.

   The settings for the selected communications port are displayed in the dialog box.

3. Select the rest of the settings.

   The settings for Baud Rate, Word Length, Parity, Stop Bits, and Handshake *(protocol)* should be the same as those set for your printer or device. The setting "Hardware" is equivalent to XON/XOFF. For the proper communications port settings, see your printer or device documentation.

4. Select the Ok command button. The communications port you select is set up.

NOTE

This command does not configure or set up the communication hardware. It gives information about the communication hardware settings to MS-Windows and the applications using the communications ports. When you set up a communications printer or device, make sure the communications port settings are configured according to the serial communications instructions supplied by your printer or device manufacturer before you try to print.

Selecting Network Terminal Services

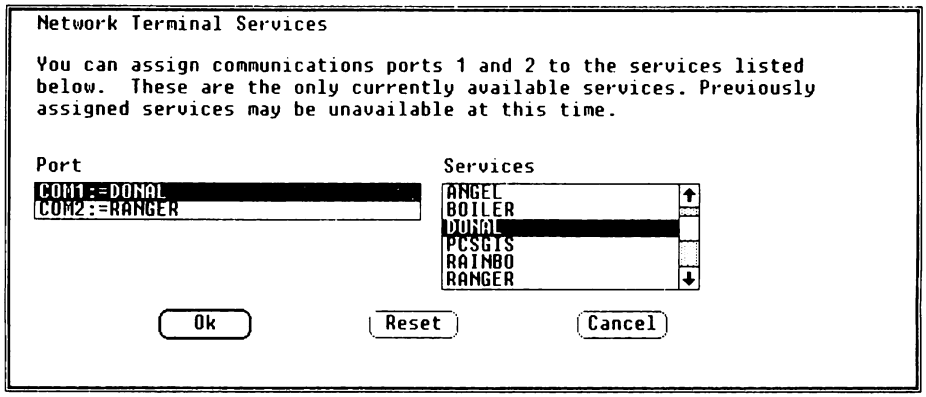
To select terminal services for the workstation's communication ports, use the Network Terminal Services command. This command lets you redirect the COM1 and COM2 communications ports to the selected terminal services. Any application using COM1 or COM2 is redirected over the local area network to the specified network terminal service.

To select a network terminal service:

1. Select the Network Terminal Services command from the Setup menu.

   MS-Windows displays a Network Terminal Services dialog box. It lists the currently available network services. Figure 8–11 shows the Network Terminal Services dialog box.

Figure 8–11: Network Terminal Services Dialog Box



NOTE

For most systems, you can access a maximum of 10 services. A warning box is displayed if the service table has overflowed.

To add more services, you must change the table size in the Network Terminal Services (LAT) driver. For more information on changing the table size, see the *Using Networks from Your Workstation*.

2. From the Port list box, select the COM1 or COM2 communications port.

   The current terminal services for that port are displayed.

3. From the Services list box, select a terminal service.

4. Select the Ok command button.

You can redirect communications ports to a network terminal service for any standard application that runs in a window, such as the VT220 terminal emulator. Using the configuration shown in Figure 8–10 and Figure 8–11, you can connect the VT220 emulator to the COM1 port; however, all communications for the VT220 emulator will use the network terminal service called DONAL.

When you run an application that uses COM1 or COM2, the selected terminal service is redirected if the following conditions are met:

- The Network Terminal Service driver (LAT) was installed prior to starting MS-Windows. This driver lists all available services, normally assigned by the key diskette.
- The redirected port is COM1 or COM2. Only COM1 and COM2 can be redirected.
- The mode of transmission is computer to computer, and does not use a modem. Only applications that do not use modem control signals to control the flow of data can be redirected.
- No more than four Network Terminal Services are active, including redirected and direct connections.
- A terminal services name is present in the WIN.INI file for the serial communication device being used. You cannot select a terminal service not listed in the Services list box.
- The terminal service is available. This availability is dynamic. If a terminal service is selected for a communications port, the terminal service is assigned to that communications port only as long as terminal service is available to the network. If the terminal service becomes unavailable to the network, it is no longer assigned to the communications port.

NOTE
Even if COM1 and COM2 hardware is not installed, redirection over the local area network can occur, because the redirection is done by software.

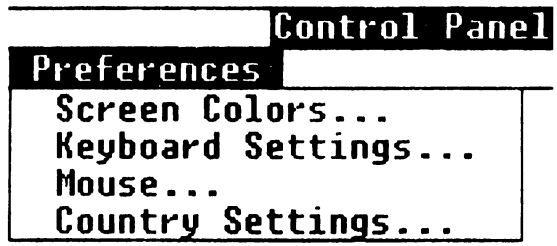
Using the Preferences Menu

The Preferences menu has four commands:

- Screen Colors, which lets you adjust shades on your screen
- Keyboard Settings, which lets you change settings such as keyclick and autorepeat
- Mouse, which lets you swap the function of the left and right mouse buttons
- Country Settings, which lets you select country-specific user preferences

Figure 8–12 shows the Preferences menu commands.

Figure 8–12: Preferences Menu Commands



Changing Screen Colors

To adjust the shades of the components in a window, use the Screen Colors command. These components are:

- Window background
- Window text
- Scroll bars
- Active (selected) title bar
- Inactive (unselected) title bar
- Title bar text
- Window frame (the thin border around the outside of the window)
- Menu bar
- Menu text
- Screen background (including the icon area)

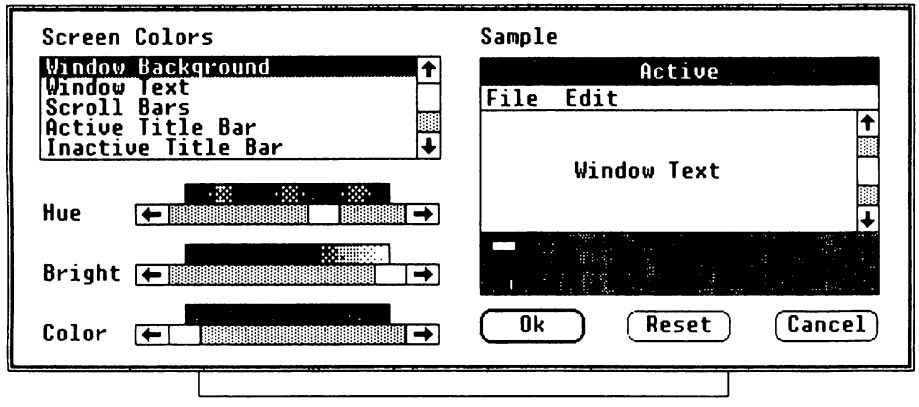
To change the shade of a component in a window:

1. Select the Screen Colors command from the Preferences menu.

   MS-Windows displays the Screen Colors dialog box. Figure 8–13 shows the Screen Colors dialog box.

   NOTE
   Set your screen to have contrasting text and background colors. Otherwise, your screen could look blank.

Figure 8–13: Screen Colors Dialog Box



2. From the Screen Colors list box, select the part of the screen for which you want to change the shade.

   The current settings for Hue, Bright, and Color of the selected component in the window are displayed in the scroll bars. The mixture of these three settings for the selected component result in the current shade displayed in the Sample area.

   To change the shade of a component in the window, change the settings for Hue, Bright, and Color.

3. To change a setting for Hue, Bright, or Color:

   a. Move the cursor to the scroll bar by clicking on the scroll bar or by pressing the Tab key until the scroll box blinks in the desired scroll bar.

b. Scroll to the right or to the left to change the setting.

   With the mouse, click on the arrows or drag the scroll box in the scroll bar.

   With the keyboard, press the right and left arrow keys to change settings in small increments, or press the Pg Up or Pg Dn keys to move across the scroll bar more quickly.

   As you scroll, the Sample area dynamically shows the changing shade of the selected window component.

c. Select another scroll bar until the desired shade is displayed in the Sample area.

d. Change the shades of all other items in the Screen Colors dialog box.

e. When you finish changing screen colors, select the Ok command button.

When you select the Ok command button, the settings are recorded in the WIN.INI file, and the dialog box is removed from the screen.

Changing Keyboard Settings

To change keyboard features, use the Keyboard Settings command. These features include:

- Keyclick volume (No sound, Soft, Intermediate, Loud)

  The default setting is Intermediate.

- Autorepeat (Enable or Disable)

  The default setting is autorepeat enabled.

- Lock selection (Caps or Shift)

  The default setting is Caps, which selects the function of the Lock key.

  — When you type a key with Caps selected, uppercase letters are used for the alphabetic keys, and the lower characters are used on the numeric/symbolic keys.

  — When you type a key with Shift selected, uppercase letters are used for the alphabetic keys, and the top characters are used on the numeric/symbol keys.

In either case, pressing the Lock key turns on the keyboard lock indicator light. To override the lock function, press the Lock key again. The lock indicator light turns off.

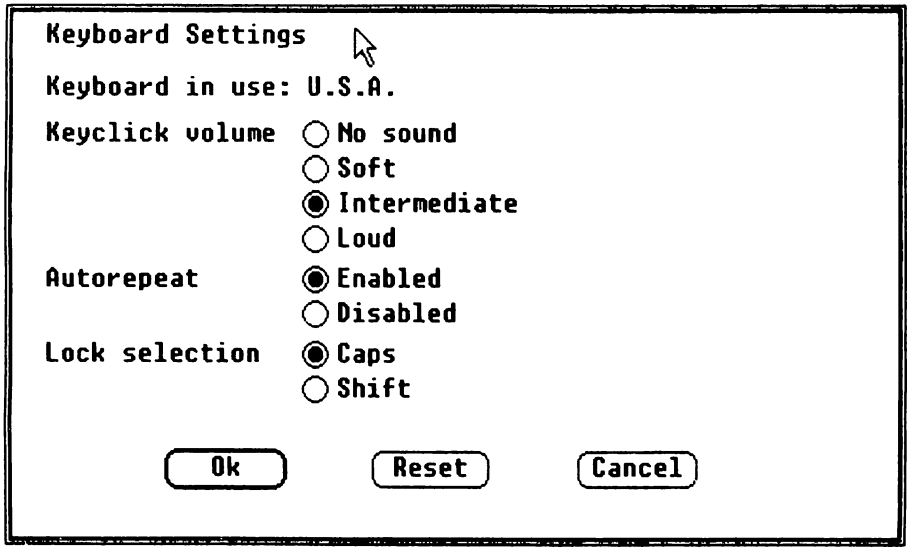
If you want to use lowercase or the upper characters on the numeric/symbolic keys without leaving Caps Lock, press the Shift key in combination with the desired key.

To change keyboard settings:

1. Select the Keyboard Settings command from the Preferences menu.

   MS-Windows displays the Keyboard Settings dialog box. Figure 8-14 shows the Keyboard Settings dialog box.

Figure 8-14: Keyboard Settings Dialog Box



2. Select the settings you want.
3. Select the Ok command button.

The keyboard settings for the keyclick volume and autorepeat are in effect for your workstation, even when you are not running MS-Windows.

When you change a keyboard feature, MS-Windows enters the change into the WIN.INI file. Any changes take effect after you click on the OK command button and remain in effect until you change them.

The default settings are used when:

- You run MS-Windows for the first time and have not made any changes to the keyboard preference features.
- The WIN.INI file is not present, or the information about the keyboard preference features has been removed from the WIN.INI file with a text editor.

Changing Mouse Settings

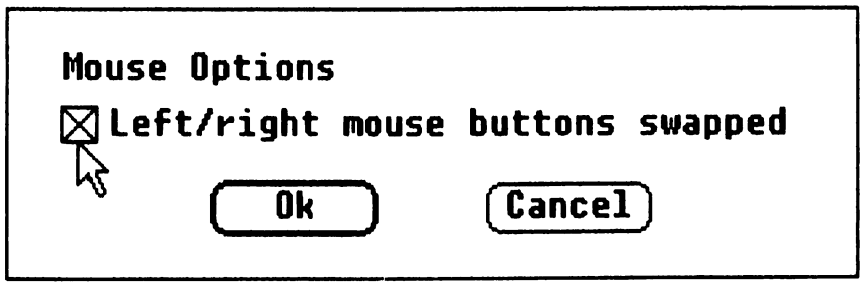
To swap the function of the left and right mouse buttons, use the Mouse command. The default setting is the left mouse button for performing the mouse actions of clicking, double-clicking, and dragging.

To swap the functions of the left and right mouse buttons:

1. Select the Mouse command from the Preferences menu.

   MS-Windows displays the Mouse Options dialog box. Figure 8–15 shows the Mouse Options dialog box.

Figure 8–15: Mouse Options Dialog Box



2. Click on the check box.

   An X is displayed in the check box, showing that the functions of the right and left mouse buttons will be swapped.

3. Click on the Ok command button.

   The functions of the left and right mouse buttons are swapped. Until you swap the functions of the left and right mouse buttons again, and remove the X from the check box, you must use the right mouse button when using any mouse action.

Changing Country Settings

To specify country-specific information, such as the formats for date and time, use the Country Settings command. This information can then be used by the MS-Windows applications you run.

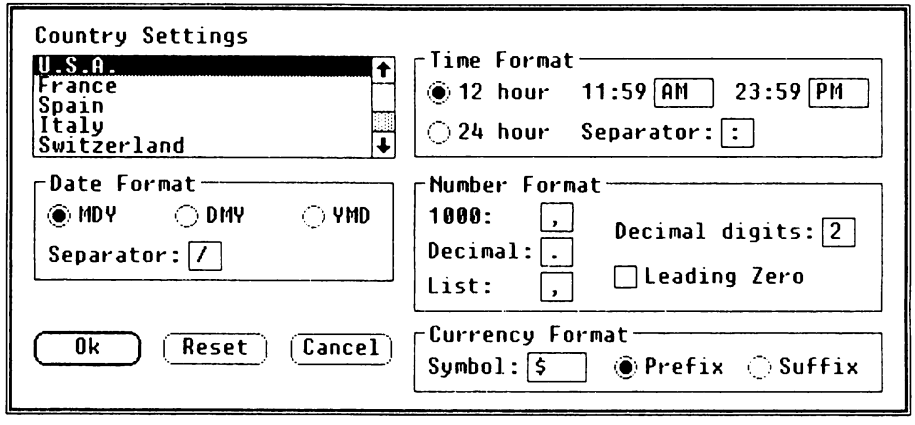
> **NOTE**
> All applications you run do not automatically access this information. Access depends on how the application interfaces with MS-Windows. When the settings are changed in MS-Windows, they must also be changed in CONFIG.SYS for them to be effective with all applications. For information on how to make these changes using the COUNTRY command, see the *MS-DOS Reference Guide* or the DOS reference manual that comes with your DOS software.

To change country settings:

1. Select the Country Settings command from the Preferences menu.

   MS-Windows displays the Country Settings dialog box. Figure 8-16 shows the Country Settings dialog box.

Figure 8–16: Country Settings Dialog Box



2. From the list box, select a country.

   The default settings for the selected country are shown in the dialog box.

3. Select the setting you want to change.

   The user can change any of the default country settings; Date Format, Time Format, Number Format, or Currency Format.

   For example, the default setting for the date format in the U.S. country setting is month/day/year. You can use day/month/year or year/month/day.

4. Select the Ok command button.

   The country settings you selected are in effect.

NOTE

A currency symbol cannot exceed five characters, even though you can enter more than five characters in the Currency Symbol field.

Chapter 9
Using the VT220 Terminal Emulator

A *terminal emulator* is an application that lets you use your workstation as if it were a terminal connected to VAX/VMS host computer. When you use a terminal emulator, your workstation keyboard and screen behave like a DIGITAL terminal.

The VT220 terminal emulator application behaves like VT52, VT100, or VT200 7 and 8-bit control terminals that support both DEC and ISO Latin-1 character sets.

The VT220 terminal emulator application has a printer interface that supports the same DIGITAL printers used by the VT220 terminal.

The VT220 terminal emulator is an MS-Windows application that offers many Set-Up parameters or selections you can change or set depending on your needs. You save these selections in a file that the emulator reads when it starts.

Wherever the words VT220 emulator are used, it means the VT220 terminal emulator for the workstation.

The VT220 emulator lets you:

- Put the VT220 emulator application on temporary hold while you switch to another application
- Receive or send information to or from a host using files
- Save and recall Set-Up selection settings using Set-Up configuration files
- Use MS-Windows Clipboard commands

- Use script processing

This chapter covers:

- Starting the VT220 emulator
- Using the VT220 emulator window
- Leaving the VT220 emulator

Starting the VT220 Emulator

Start the VT220 emulator either by:

- Expanding the VT220 emulator icon (a small terminal) in the icon area into the work area
- Using the Run command from the File menu in the MS-DOS Executive window

  To do this:

  1. Select the Run command.
  2. Type VT220 in the dialog box.
  3. Click on the Ok command button.

  Your workstation is emulating a VT220 terminal, and your host login information is displayed.

  NOTE
  If your login information is not displayed, see your system administrator.

Using Multiple VT220 Emulators

You can run more than one VT220 emulator. You might want to do this if you are:

- Editing a file in one VT220 emulator and want to access or monitor your mail using another VT220 emulator
- Compiling a program in one VT220 emulator and want to edit a memo using another VT220 emulator

When you start another VT220 emulator, the title bar displays square brackets next to the VT220 emulator title. A number is displayed in these brackets to indicate the emulator session you are running. These brackets only display if you are running more than one VT220 emulator application.

You can change the VT220 emulator Window Title in Display Set-Up screen to any 30 character string.

If there is more than one copy of the VT220 icon in the icon area, a unique number is displayed in each icon. You can change the way each icon looks by defining any device-independent .ICO file in the VT220 Display Set-Up screen.

Scrolling in the Emulator Window

If you need to view more information than can be displayed in an emulator window, use these keys:

Ctrl/Find	To scroll to the left
Ctrl/Select	To scroll to the right
Ctrl/Prev	To scroll up
Ctrl/Next	To scroll down

Using the VT220 Emulator System Menu Commands

The VT220 emulator adds the following commands to the standard System menu commands:

- Set-Up
- Mark
- Copy
- Paste
- Script
- About

The Set-Up Command

You can start or exit from the VT220 emulator Set-Up utility by selecting the Set-Up command. Chapter 11 discusses the Set-Up utility.

The Mark, Copy, and Paste Commands

The VT220 emulator lets you transfer information between itself and the MS-Windows Clipboard application. You copy the information from the emulator to the Clipboard or paste information from the Clipboard to the emulator as if you typed it. When you send information to the Clipboard, the characters are interpreted as ISO Latin-1 characters.

To copy text to the Clipboard:

1. Select Mark from the VT220 System menu.

   The word "Mark" is displayed in parentheses next to the VT220 emulator title in the title bar. A special vertical bar, the insertion point, is also displayed in the window.

2. Drag the insertion point across the text you want to copy.

3. Select Copy to move the marked text to the Clipboard.

> **NOTE**
> Marking is disabled whenever a key is typed, or when Mark is selected a second time.

You can paste from the Clipboard at any time. The pasted text is sent to the host computer. Text is not displayed in the window unless the host echoes it, or Local Echo is enabled in Set-Up.

The Script Command

The Script command lets you automatically run script commands contained in script files as if you were in an interactive computing session.

The About Command

The About command displays the version number of the VT220 emulator application.

Leaving the VT220 Emulator

To leave the VT220 emulator select one of the following commands from the VT220 System menu:

- The Icon command.

  Selecting the Icon command shrinks the VT220 emulator to an icon without exiting from the emulator application.

- The Close command.

  Selecting the Close command closes the VT220 emulator. Before using this command, you should log off the host system.

Chapter 10
Using the VT220 Emulator Keyboard

This chapter:

- Shows a diagram of the workstation keyboard.
- Describes the differences between the workstation keyboard for the VT220 emulator and an actual VT220 terminal keyboard.

The VT220 Emulator Keyboard

The layout of the VT220 emulator keys on a workstation keyboard is identical to the emulated terminal except for:

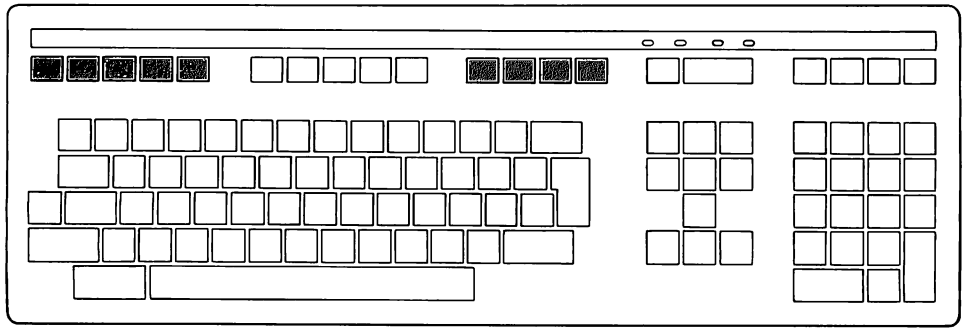
- Labels for some keys
- Location of the ' , ~, <, and >, and Compose key

The labels referred to are those on the standard United States legend strip. All countries are supplied with a separate emulator legend strip and you should be sure to use that strip with the VT220 emulator.

Labels

Some labels for the workstation top-row function keys differ from those on a VT220 terminal keyboard. These keys are indicated in Figure 10–1.

Figure 10–1: Workstation Keyboard



The VT220 emulator keys function exactly as they do for the VT220 terminal. In addition, the VAXmate workstation keyboard has an Alt key.

For more information about the Alt key, see Appendix D.

Top-Row Function Keys

Most of the top-row function keys have functions assigned to them by your application software. Refer to your application software documentation for their use.

This section describes keys with fixed meanings for the VT220 emulator. The labels in parentheses refer to the labels on the standard United States legend strip.

F1 (Hold)	Pressing the F1 (Hold) key freezes the screen display and stops any new characters from being displayed. Pressing the F1 (Hold) key again returns the emulator to normal operation. If the F1 key is pressed, the word "Hold" is displayed next to the title in the title bar.
F2 (Print Screen)	Pressing the F2 (Print Screen) key sends the screen text to the DIGITAL compatible printer. **Note:** If you print to a non-DIGITAL printer the results are unpredictable. Pressing Ctrl/F2 (Print Screen) sets or resets Auto Print Mode.
F3 (Set-Up)	Pressing the F3 (Set-Up) key allows you to enter and exit Set-Up.
F4 (Data/Talk)	Used when the optional integral modem is installed or if an external modem is used. For more information, refer to the *VAXmate Modem User's Guide*. **Note:** The integral modem may not be available for your country.
F5 (Break)	Pressing the F5 (Break) key transmits a break if you enabled Break in Set-Up. You may use it with other key combinations when the optional integral modem is installed. For more information, refer to the *VAXmate Modem User's Guide*. Pressing the Shift/F5 keys initiates a communications line disconnect. Pressing the Ctrl/F5 keys sends an answerback message as defined in Set-Up. **Note:**The integral modem may not be available for your country.
F11 (ESC)	Pressing F11 (ESC) generates an escape character when in VT52 and VT100 modes. In VT200 modes, F11 is a function key.
F12 (BS)	Pressing F12 (BS) generates a backspace character when in VT52 and VT100 modes. In VT200 modes, F12 is a function key.
F13 (LF)	Pressing F13 (LF) generates a line feed character when in VT52 and VT100 modes. In VT200 modes, F13 is a function key.

Using Special Keyboard Mappings with the VT220 Emulator

When using the VT220 emulator with an IBM or IBM compatible keyboard, a number of keys perform functions that are different from their labels.

To create VT220 application function keys not available on the IBM keyboards, special keyboard mappings and, in some cases, key combinations are used to take advantage of those VT220 keys.

For example, to use the function supplied by the VT220 F11 key, using the IBM Enhanced keyboard you would type:

Alt F1

Tables 10-1 through 10-3 list the labels for the VT220 emulator and their IBM counterparts.

Table 10–1: IBM Enhanced Keyboard Keys

VT220 Function Key	IBM Alt Key Sequence
F11	Alt/F1
F12	Alt/F2
F13	Alt/F3
F14	Alt/F4
F15	Alt/F5
F16	Alt/F6
F17	Alt/F7
F18	Alt/F8
F19	Alt/F9
F20	Alt/F10
VT220 Edit Keypad Key	**IBM Edit Keypad Key**
Home	Insert
Ins	Home
Del	End
End	Pg Up
Pg Up	Delete
Pg Dn	Next
VT220 Numeric Keypad Key	**IBM Numeric Keypad Key**
Compose	Escape
Add	Alt/-

Table 10–2: IBM-PC/AT Keyboard Keys

VT220 Function Key	IBM Alt Key Sequence
F11	Alt/F1
F12	Alt/F2
F13	Alt/F3
F14	Alt/F4
F15	Alt/F5
F16	Alt/F6
F17	Alt/F7
F18	Alt/F8
F19	Alt/F9
F20	Alt/F10
VT220 Numeric Keypad Key	**IBM Numeric Keypad Key**
Compose	Alt/PF1
Home	Alt/7
up arrow	Alt/8
Pg Up	Alt/9
left arrow	Alt/4
right arrow	Alt/6
End	Alt/1
down arrow	Alt/2
Pg Dn	Alt/3
Ins	Alt/0
Del	Alt/.

Table 10–3: IBM-PC/XT Keyboard Keys

VT220 Function Key	IBM Alt Key Sequence
F11	Alt/F1
F12	Alt/F2
F13	Alt/F3
F14	Alt/F4
F15	Alt/F5
F16	Alt/F6
F17	Alt/F7
F18	Alt/F8
F19	Alt/F9
F20	Alt/F10
VT220 Numeric Keypad Key	**IBM Numeric Keypad Key**
Num Lock	Alt/PF2
Scroll	Alt/PF4
End	Alt/1
down arrow	Alt/2
Next	Alt/3
left arrow	Alt/4
right arrow	Alt/6
Home	Alt/7
up arrow	Alt/8
Pg Up	Alt/9
Ins	Alt/0
Del	Alt/.
Add	Alt/Enter

Chapter 11
Using Set-Up With the VT220 Emulator

This chapter describes:

- How to enter and exit Set-Up
- How to make or change Set-Up settings
- Each Set-Up screen and all the settings

Entering Set-Up

The VT220 emulator offers several Set-Up selections that affect such settings as tab stops, screen background, or column width.

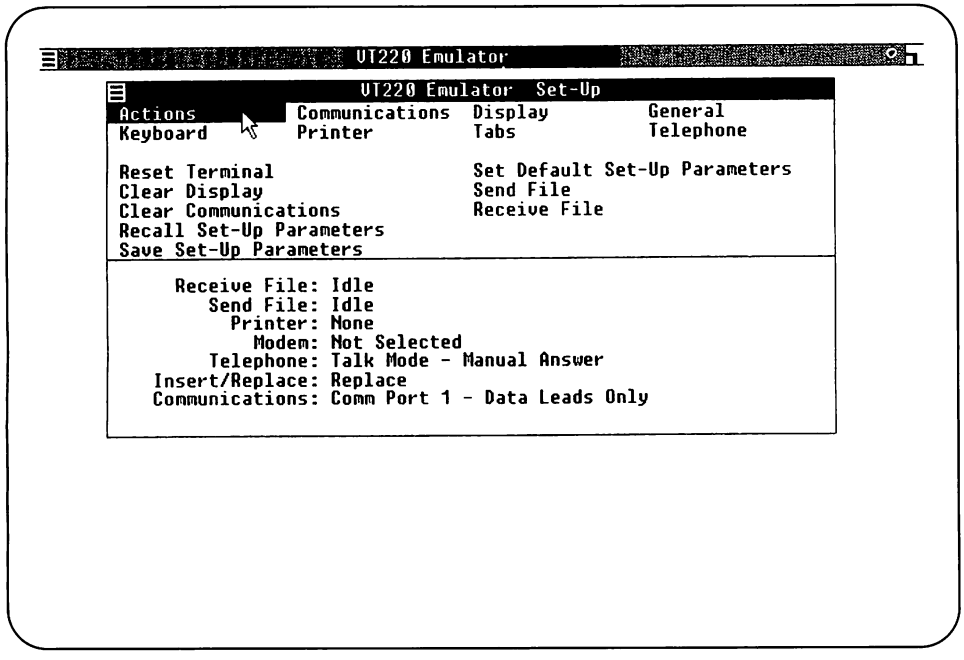
To enter Set-Up either:

- Press the F3 (Set-Up) key
- Select the Set-Up command from the Set-Up System menu

Understanding the VT220 Set-Up Screens

After you enter Set-Up the VT220 emulator displays Figure 11–1, the Actions Screen, the first of eight Set-Up screens. For this discussion the Actions Screen is being treated as a general example of all eight screens.

Figure 11–1: VT220 Set-Up



Each Set-Up screen displays:

- A title bar with a Set-Up System menu in the first line.
- A menu bar in the next two lines of the screen with the name of the currently selected screen highlighted. You select a screen by clicking on its name.
- The current selections and settings in the mid-section of the screen. Some selections are actions that can be taken, while others represent settings with different values. These selections vary depending on the selected screen.
- A status section in the bottom half of the the screen.

Table 11-1 describes each of the Set-Up screens.

Table 11–1: VT220 Set-Up Screens

Set-Up Screen	Description
Actions	Contains selections relating to clearing the screen and resetting the emulator, saving and recalling Set-Up settings, and sending or receiving files.
Communications	Contains selections for defining the communications environment, such as speed, parity, and disconnect.
Display	Contains selections for defining screen display, such as columns, cursor style, and background.
General	Contains commonly-used general operating selections, such as local echo, character sets, and terminal ID.
Keyboard	Contains selections for defining keyboard operating characteristics, such as margin bell, break, and answerback.
Printer	Contains selections for defining printer operations, such as print size or type of printer.
Tabs	Contains selections for defining the tab settings.
Telephone	Lets you determine how telephone answering is done. You can also enter the telephone numbers you want to use with the modem.

From each Set-Up screen you can:

- View the current selections and settings
- Change the current settings to suit your needs
- Access any of the other Set-Up screens from the menu

All settings can be saved in or recalled from Set-Up files. You can also recall the factory default settings.

The VT220 Status Section

The status section displays information relating to the state of operations you initiate through various Set-Up selections.

All screens for the VT220 emulator have a bottom section displaying the current status for:

- Receiving or sending a file
  - — Idle or In Progress
- Printer
  - — Printer type and Mode
- Modem usage (valid only if the optional integral modem is installed, and you selected Modem Control)
  - — Selected or Not selected
- Telephone modes (valid only if the optional integral modem is installed, and you selected Modem Control)
  - — Manual or Automatic Answer
- Insert/Replace mode
- Communications
  - — Comm Port 1, Comm Port 2, or Network Terminal Service

NOTE
The VT220 status area is a reporting area only.

Changing Settings in VT220 Set-Up

You can use either the mouse or the keyboard in VT220 Set-Up. This section describes only how to use the mouse. For information on how to use the keyboard to change settings, see Appendix D.

Using the Mouse in Set-Up

To select a Set-Up screen and change a setting:

1. Select the desired screen from the menu area.
2. After the desired Set-Up screen is displayed, click on the selection you want to view or change.

   If a drop-down menu is displayed, go to the next step; otherwise release the mouse button.
3. Drag the pointer to the desired setting and release the mouse button.

NOTE
Some settings take effect immediately; others take effect when you exit Set-Up.

Exiting Set-Up

To exit Set-Up either:

- Press the F3 (Set-Up) key again
- Select the Close command from the Set-Up System menu

Using Set-Up Table Information

The following sections describe the Set-Up screens and the settings you can change.

The information for each Set-Up screen is organized as follows:

- A description of the Set-Up screen
- The VT220 screen
- A table containing:
  - Selection definitions
  - Setting descriptions for each selection
  - Default settings

Actions Screen

Whenever you enter VT220 Set-Up, it displays the Actions Set-Up screen.

Figure 11–2: VT220 Actions

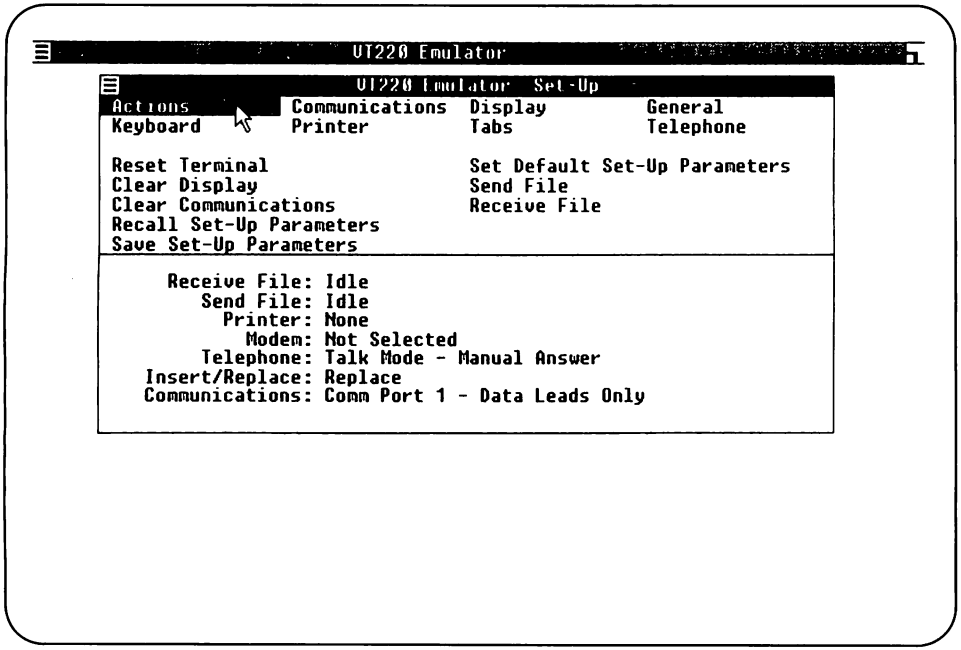


Table 11-2 defines the Actions Set-Up selections.

Table 11–2: VT220 Actions Set-Up

Selection	Function
Reset Terminal	Resets many terminal operating settings to the power up default state. Does not affect NRC (National Replacement Characters), multinational modes, user-defined keys, or communications. It takes effect immediately.

Table 11–2 (Cont.): VT220 Actions Set-Up

Selection	Function
Clear Display	Clears the display and sends the cursor to the upper-left corner of the screen.
Clear Communications	Clears communication lines immediately and stops any print operation in progress. It also exits printer controller mode. Does not affect LAT communications.
Recall Set-Up Parameters	Replaces all existing settings with values you saved in a default file called DEFAULT.220 or in a file you created. Clears the dialog box from the Actions Set-Up screen and returns the cursor to the upper-left corner of the Actions Set-Up screen.
Save Set-Up Parameters	Saves the Set-Up settings in a default file called DEFAULT.220 or in a file you can specify. Clears the dialog box from the Actions Set-Up screen and returns the cursor to the upper-left corner of the Actions Set-Up screen.
Set Default Set-Up Parameters	Replaces all current Set-Up settings with factory default settings. Clears the dialog box from the Actions Set-Up screen and returns the cursor to the upper-left corner of the Actions Set-Up screen.

Table 11–2 (Cont.): VT220 Actions Set-Up

Selection	Function
Send File	Allows you to send characters to a host from an MS-DOS text file as though you entered them from a keyboard.
Open File	Displays a dialog box and asks you to enter a file name. When you open a file from the dialog box, sending begins after you select Ok and exit Set-Up. When the file is opened this setting is displayed in a lighter shade until the file is closed.
Close File	Displayed in a lighter shade until you open a file. Closes and saves the file.
Receive File	Controls the receiving of characters from a host into a specified file.
Open File	Displays a dialog box and asks you to enter the name of the file that is to receive the characters. If a file of the same name already exists, it is replaced.
Open File and Append	This is identical to Open File except that text is appended to a file of the same name if it exists. If not, a new file is created.
Close File	File logging is ended and the file is closed.
On	File logging resumes.
Off	File logging is suspended but the file remains open.
Script File	Displays a dialog box and asks you to enter a script filename. When Set-Up is exited, the file is opened and transmission begins.

Communications Screen

The Communications Set-Up screen lets you define the communications environment between the terminal and the host.

Normally a terminal can only connect to a host using a serial port. Your workstation VT220 emulator allows you to connect to a host using either:

- A serial port
- Network Terminal Services/the ThinWire Ethernet port

Figure 11–3: VT220 Communications

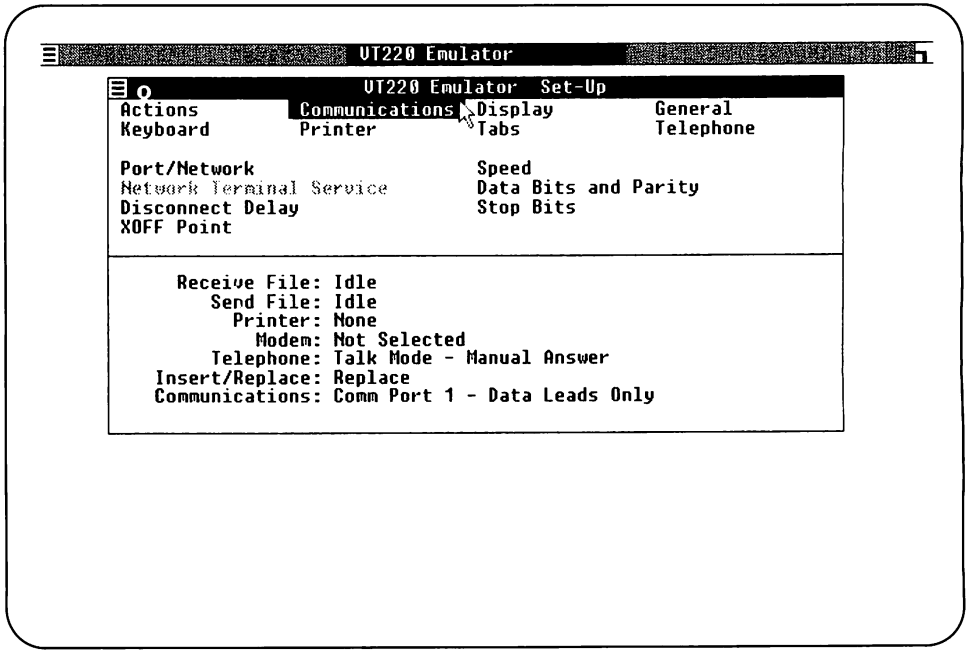


Table 11-3 defines the Communications Set-Up selections and, where applicable, the settings.

Table 11–3: VT220 Communications Set-Up

Selection	Function
Port/Network	Indicates the type of port used for communication with a host, either serial or Network Terminal Services communications. If you select serial communications, Network Terminal Service is displayed in a lighter shade on your screen.
Comm Prt 1: Data Leads Only (default)	Select when you connect to the host using serial communications.
Comm Port 1: Full Modem Control	Select if your workstation is connected to the host through the communications port and an external modem requiring modem control is used.
Comm Port 2: Data Leads Only	Select when you connect to the host using serial communications.
Comm Port 2: Full Modem Control	Select if your workstation is connected to the host through the communications port and an external modem requiring modem control is used. **Note:** The VT220 emulator may not function correctly with certain external modems due to timing inconsistencies under MS-Windows. To avoid problems using external modems, use the SETHOST emulator.
Comm Port 2: Integral Modem	Select if the optional integral modem is installed, and the workstation uses it to communicate with the host. **Note:** The integral modem may not be available for your country.

Table 11–3 (Cont.): VT220 Communications Set-Up

Selection	Function
Network Communication Port	Selects connection to Network Terminal Services. You must be connected to the Ethernet to access these services. If you have not selected a Network Terminal Service, a dialog box is displayed listing the available workstation services. For more information on defining the table size for these services in the MSNET.INI or in the AUTOEXEC.BAT, see the *VAXmate Services for MS-DOS Administration Guide*. Click on the service you want to access, then click on the Ok command button.
Network Terminal Services	If displayed in a lighter shade, you are using serial communications. If you set the Network selection under Port/Network, all items relating to serial communications are displayed in a lighter shade, and you are connected to services available under Network Terminal Services.
Disconnect Delay	Selects (when modem control is used) the amount of time before the workstation disconnects from the communications line if the carrier detect is lost.
2 second delay (default)	Most countries, except the United Kingdom, use the two-second delay.
60 Millisecond delay	The 60 millisecond delay is for use in the United Kingdom.

Table 11–3 (Cont.): VT220 Communications Set-Up

Selection	Function
XOFF Point	Selects the XOFF point or disables the automatic XON/XOFF flow control. For most applications you should set XOFF at 64 or 256. If you set XOFF greater than 256 and have a buffer overflow problem, set XOFF to the next lower value.
XOFF at 64 (default)	The choices for XOFF are: 64 (default), 256, 512, and 1024.
Disabled	Characters are received continuously from the host. Some characters may be lost.
Speed	Selects the rate at which characters are received or transmitted. The default is 9600.
Data Bits and Parity	Selects the character format used for communication with the host. The default is 8 bits - No Parity.
Stop Bits	Selects the number of stop bits (1 or 2) required for use by the host port. The default is 1 stop bit.

Display Screen

The Display Set-up screen lets you define screen display characteristics.

Figure 11–4: VT220 Display

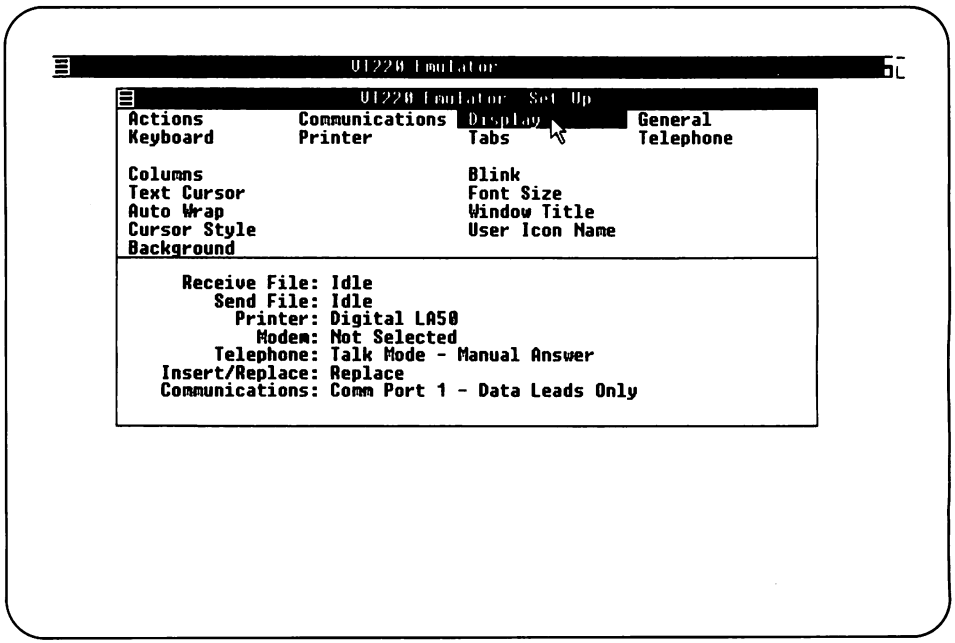


Table 11-4 defines the Display Set-Up selections and, where applicable, the settings.

Table 11–4: VT220 Display Set-Up

Selection	Function
Columns	Selects an 80- or 132-column screen for text.
80 Columns (default)	Selects an 80-column screen.
132 Columns	Selects a 132-column screen.
Text Cursor	Selects whether to display a text cursor.
Visible (default)	Displays the cursor.
Invisible	Does not display the cursor.
Auto Wrap	Selects whether text automatically wraps on the screen.
On	Causes characters that reach the right margin to automatically be displayed in the first character position of the next line.
Off (default)	Causes characters that go beyond the right margin to overwrite the last character position of the current line.
Cursor Style	Selects the text cursor style.
Block (default)	Displays block cursor.
Underline	Displays underline cursor.

Table 11–4 (Cont.): VT220 Display Set-Up

Selection	Function
Background	Selects the screen display type.
Light (default)	Selects reverse video screen display (dark text on a light background).
Dark	Selects a dark screen display (light text on a dark background).
Blink	Blinking display is not implemented for the VT220 emulator. To indicate characters with blinking attributes, you have a choice of displaying these characters as either normal video (default), reverse video, or underscored.
Font Size	Changes the font size of characters displayed on the screen. The settings are: Normal (default), Small, or Automatic. Automatic switches between the two font sizes according to whether a whole line fits in the current window width.
Window Title	Displays a dialog box asking you to enter a title. The maximum number of characters you can use is 30. When you press the Enter key, the title bar changes to reflect your entry. This parameter is saved in the Recall Set-Up file.
User Icon Name	Displays a dialog box and asks you to select either the standard VT220 icon or a special icon. The icon file format uses a .ICO default extension. When you press the Enter key, the icon changes to reflect the defined icon. The icon name is saved in the Recall Set-Up file.

General Screen

The General Set-Up screen lets you define a group of commonly-used general operating settings.

Figure 11–5: VT220 General

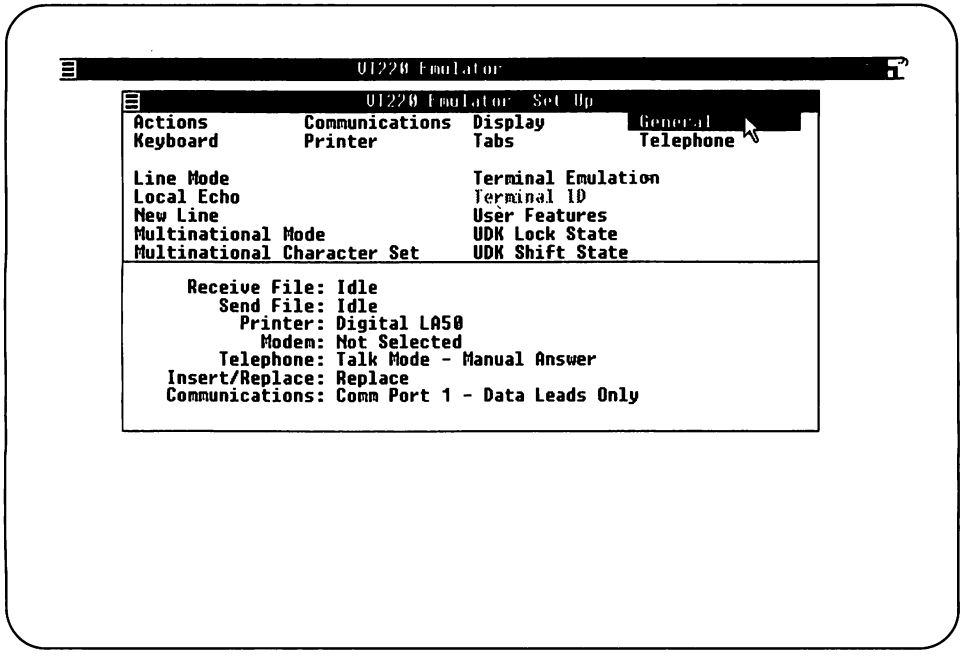


Table 11-5 defines the General Set-Up selections and, where applicable, the settings.

Table 11–5: VT220 General Set-Up

Selection	Function
Line Mode	Lets you select the mode of operation.
On Line (default)	Lets the workstation communicate with a host.
Off Line	Puts a host on hold. Data entered at the keyboard goes directly to the workstation screen.
Local Echo	Enables or disables the local echo selection.
On	Directs characters from the keyboard to the screen as well as to the host. It is used when the host does not send the characters back to the screen.
Off (default)	Directs characters from the keyboard to the host only. The host in turn may or may not send the characters back to the screen.
New Line	Selects whether the Return key generates a carriage return only or a carriage return and a line feed.
Enabled (Return = CR/LF)	Generates a carriage return and a line feed. Received carriage returns cause a new line operation. When autotyping, any line feeds in an autotyped file are sent. When using Clipboard, any pasted lines are separated by carriage returns and line feeds.
Disabled (Return = CR) (default)	Generates a carriage return only. Received carriage returns do not cause a new line operation. When autotyped or Clipboard pasted lines are separated by carriage returns, line feeds are not sent. **Note:** When the VT220 emulator is in numeric keypad mode, this setting affects the Enter key in the same way it does the Return key.

Table 11–5 (Cont.): VT220 General Set-Up

Selection	Function
Multinational Mode	Determines character set mappings for the terminal.
NRC	Selects the 7-bit NRC (National Replacement Character) mode. The NRC set depends on the country keyboard which is determined during MS-Windows configuration Set-up.
Multinational (default)	Selects the 8-bit MCS (Multinational Character Set), including the 7-bit ASCII character set. **Note:** This selection is disabled when you select NRC mode.
Multinational Character Set	Allows you to choose either the ISO Latin-1 or the DEC Multinational character set.
ISO Latin-1	Selects the 8-bit ISO Latin-1 character set.
DEC Multinational (default)	Selects the 8-bit DEC Multinational character set.
Terminal Emulation	Determines how the VT220 emulator acts. It can act like a VT52, VT100, VT200 with 7-bit controls (default), or VT200 terminal with 8-bit controls.
Terminal ID	Identifies your terminal as a VT220 (default), VT102, VT101, or VT100 terminal. Terminal ID can only be selected when emulation is set for VT100 mode. It is displayed in a lighter shade (not selectable) if you are in VT52 or VT200 mode.

Table 11–5 (Cont.): VT220 General Set-Up

Selection	Function
User Features	Selects whether a host can change certain user features.
Locked	Prevents a host from changing certain user features.
Unlocked (default)	Lets a host change certain user features. The user features are: Light/Dark Screen, Tab Stops, and Keyboard Lock. **Note:** Some applications expect to control these user settings. If this applies to your application, select Unlocked.
UDK Lock State	Determines whether a host can change user-defined key (UDK) definitions. UDKs can be saved in the Set-Up file.
Locked	Prevents UDKs from being changed.
Unlocked (default)	Allows UDKs to be changed.
UDK Shifted State	Allows you to choose unshifted User Defined Keys (UDKs). Your selection is saved in the Set-Up file and is recalled when you start the VT220 emulator.
Shifted	Allows UDKs to be invoked from a shifted state.
Unshifted (default)	Allows UDKs to be invoked from an unshifted state.

NOTE

To program the 15 programmable function keys, you have 256 available bytes. Space is defined on a first-come/ first-serve basis. After the 256 bytes are used, you cannot define additional keys or redefine existing keys until the entire buffer is cleared.

Keys are loaded sequentially, so once the limit is reached, you cannot load another key definition. The VT220 emulator does not inform you when the limit is reached.

In addition, because the keys are saved in the Set-Up file, the 256 byte limit carries over from one session to the next until you clear the buffer.

Keyboard Screen

The Keyboard Set-Up screen lets you define keyboard operating features.

Figure 11-6: VT220 Keyboard

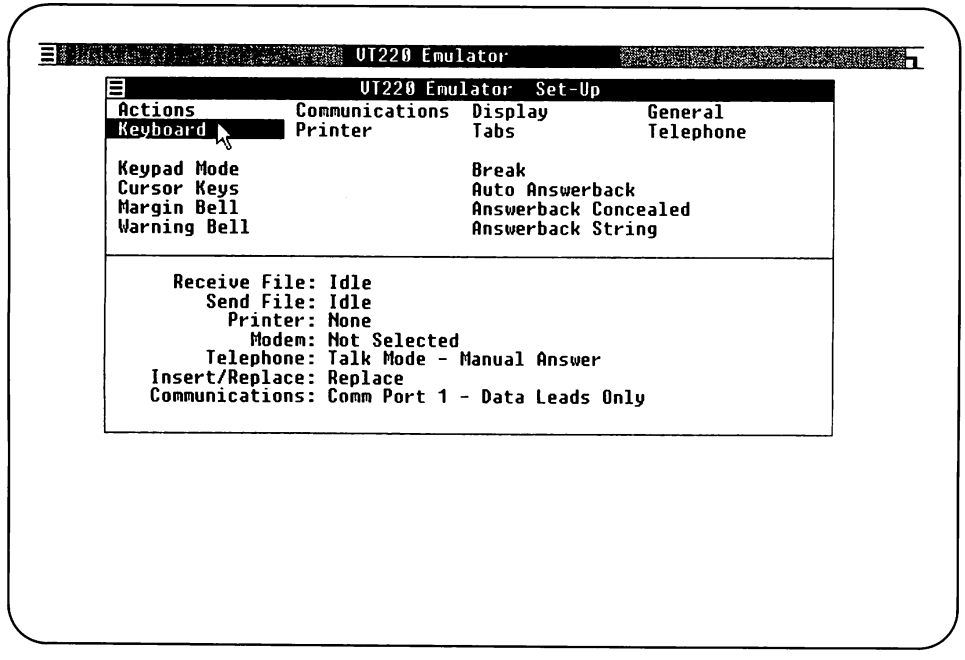


Table 11-6 defines the Keyboard Set-Up selections and, where applicable, the settings.

Table 11-6: VT220 Keyboard Set-Up

Selection	Function
Keypad Mode	Sets the terminal keypad for generating either numbers or control codes.
Numeric (default)	Sends numbers from the numeric keypad.
Application	Sends escape sequences from the numeric keypad.
Cursor Keys	Selects the kind of control codes sent by the cursor keys. It is disabled if the terminal is in VT52 mode.
Normal Control (default)	Sends ANSI cursor control sequences for cursor keys (up, down, left, and right).
Application Control	Sends application program control functions for cursor keys.
Margin Bell	Determines whether the terminal sounds a bell tone when the text cursor approaches the right margin.
Enabled (default)	Turns on the margin bell setting.
Disabled	Turns off the margin bell setting.

Table 11–6 (Cont.): VT220 Keyboard Set-Up

Selection	Function
Warning Bell	Determines whether the terminal generates a bell tone, such as for operating errors, mail messages, or system messages.
Enabled (default)	Turns on the warning bell setting.
Disabled	Turns off the warning bell setting.
Break	Enables or disables the Break key function.
Enabled (default)	Turns on the Break key function.
Disabled	Turns off the Break key function.
Auto Answerback	Selects whether the answerback message is automatically sent to a host after a communication line connection.
Enabled (default)	Turns on the answerback message.
Disabled	Turns off the answerback message.
Answerback Concealed	Selects whether your answerback message entry is displayed on the screen.
Concealed	Your answerback message is not displayed on the screen. You can only reset this setting to Not Concealed by entering a new answerback message.
Not Concealed (default)	Displays the answerback message as entered.

Table 11–6 (Cont.): VT220 Keyboard Set-Up

Selection	Function
Answerback String	Lets you enter an answerback message. A dialog box is displayed and asks for the answerback string. The emulator sends an answerback message when it receives an ENQ (enquiry control character) or if you or the host send a Ctrl/Break. In the case of ENQ, the message you enter is sent to a host without affecting screen data or requiring further operator action. You can enter any keyboard character, up to a 30 character limit. To enter a control sequence , enter a caret ''^''followed by the control letter. For example, a control C would be entered as ''^C''.

Printer Screen

The Printer Set-Up screen lets you select printer (or auxiliary device) operations for the emulators.

Figure 11–7: VT220 Printer

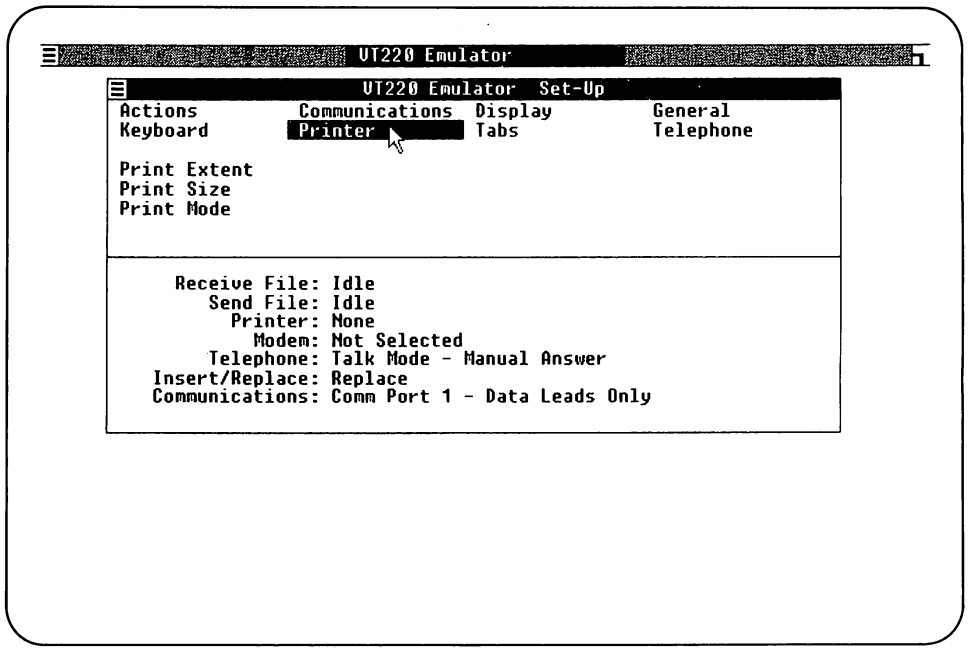


Table 11-7 defines the Printer Set-Up selections and, where applicable, the settings.

Table 11–7: Printer Set-Up

Selection	Function
Print Extent	Determines how much of the screen is printed during a text print operation.
Full Page (default)	Prints the full screen.
Scroll Region	Prints only the scrolling region.
Print Size	Determines the size of the printed characters.
Normal (default)	Prints 80 characters on a line.
Compressed	Prints 132 characters on a line.
Print Mode	Selects the operating mode for the printer.
Normal (default)	Only sends information to the printer when you invoke print functions from the keyboard.
Auto	Prints the current text line when the terminal receives a line feed, form feed, or vertical tab code from a host.
Controller	Treats the device connected to the printer port as a terminal, while the VT220 emulator monitors traffic. (The printer and host transfer data without displaying the data on the screen.)

Tabs Screen

The Tabs Set-Up screen lets you set the terminal tab stop interval settings.

Figure 11–8: VT220 Tabs

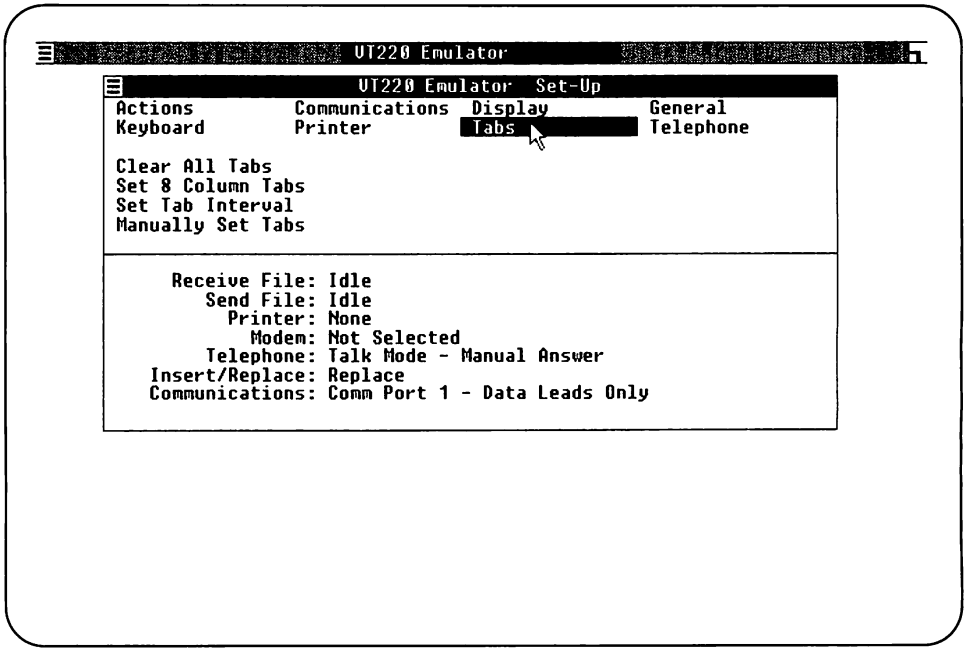


Table 11-8 defines the Tab Set-Up selections and, where applicable, the settings.

Table 11-8: VT220 Tab Set-Up

Selection	Function
Clear All Tabs	Clears all tab settings.
Set 8 Column Tabs	Sets tabs every 8 columns, starting with column 9.
Set Tab Interval	Displays a dialog box containing the current tab stop setting. You enter a new interval in the dialog box by typing the desired number.
Manually Set Tabs	Allows you to change individual tab stops. The tab intervals are updated in a displayed ruler.

Setting VT220 Tabs Manually

To manually set tabs for the VT220 emulator:

1. Click on the Manually Set Tabs selection.

   A tabs ruler and blinking cursor are displayed below the Tabs Set-Up screen where the Icon area was. Figure 11-9 shows the current tab settings.

2. To move the blinking cursor to the desired tab setting, use the mouse pointer.

3. Click on the desired tab setting.

   A "T" is displayed where you clicked.

   To erase a tab stop, click on the "T."

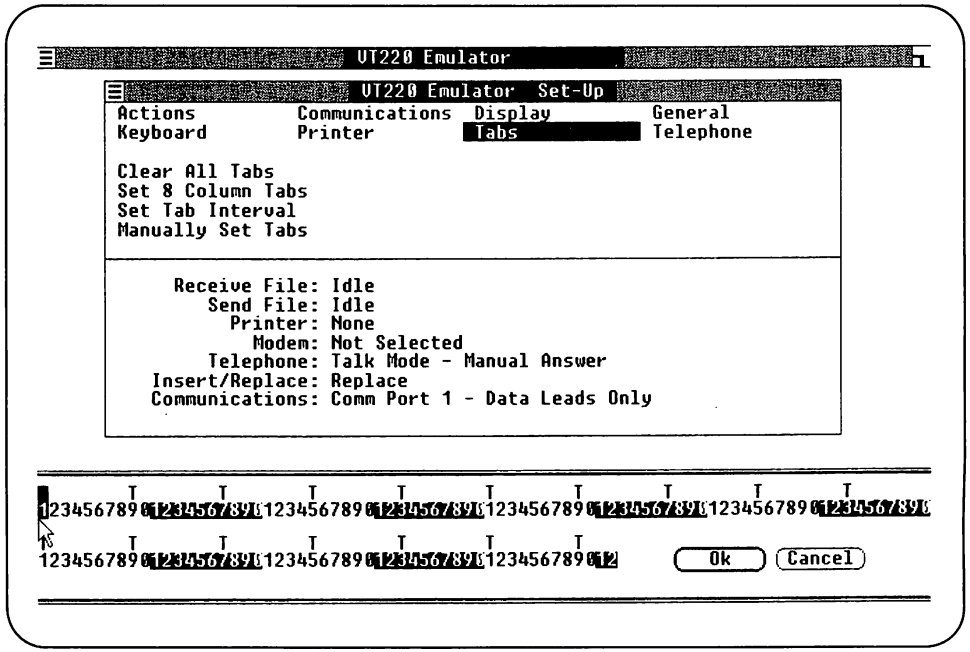
4. Repeat steps two and three until you have marked all desired tab stops.

   NOTE

   To cancel the tab settings you made and leave the tab settings unchanged, click on the Cancel command button.

5. To exit the tabs ruler and save the tab settings, click on the Ok command button.

Figure 11–9: Manually Setting VT220 Tabs



You are returned to the Tabs Set-Up selections.

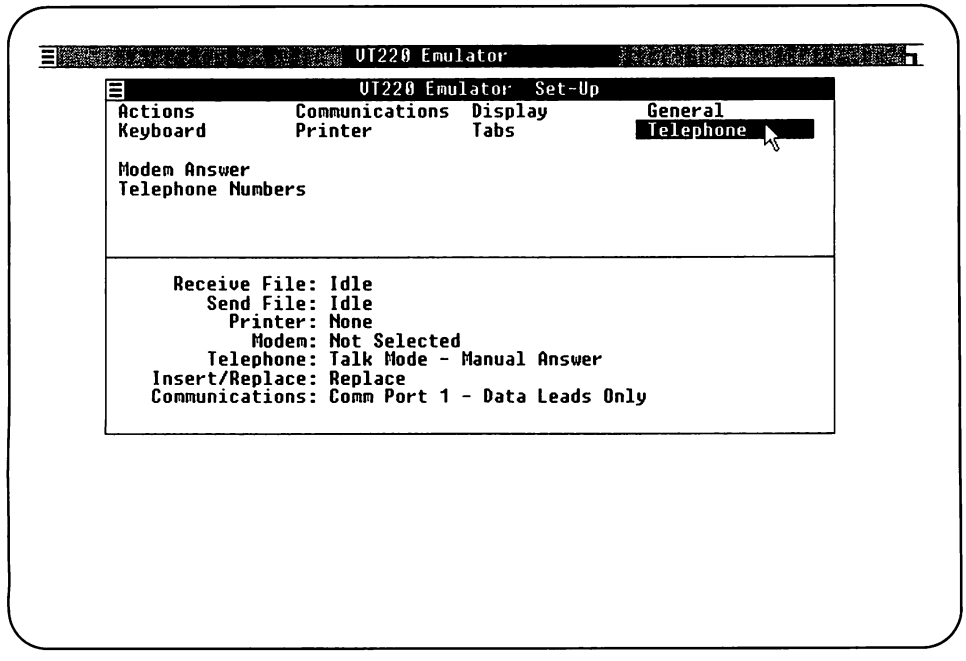
Telephone Screen

The telephone Set-Up screen lets you store and display telephone numbers for automatic dialing.

To use the Telephone selections, you should have:

- Installed the integral modem option (This is not available for all countries.)
- Selected and saved from the Communications screen:
  - The Integral Modem selection
  - The appropriate transmit and receive speeds

Figure 11–10: Telephone



For more information on telephone settings, refer to the *VAXmate Modem User's Guide*.

Table 11-9 defines the Telephone Set-Up selections and, where applicable, the settings.

Table 11–9: VT220 Telephone Set-Up

Selection	Function
Modem Answer	Selects automatic telephone answering by the terminal or manual telephone answering by the user.
Manual (default)	Leaves the integral modem in talk mode after disconnecting from the host and allows you to answer the incoming call. Manual answer is required for normal telephone operation.
Automatic	Leaves the integral modem in data mode after disconnecting from the host and allows the terminal to automatically answer the incoming call.
Telephone Numbers	Displays a dialog box requesting you to enter phone numbers. Any previously entered phone numbers (A-J) are remembered and displayed. To enter phone numbers, click to the right of the desired letter. An insertion point is displayed indicating where to type in the phone number. Type in a phone number or type over an existing phone number. Repeat the process until you have entered or changed all the desired phone numbers. After you type the phone number(s), click on the Ok command button. You save these settings by using the Save Parameters selection before exiting Set-Up.

Chapter 12
Using VT220 Special Features

This chapter tells you how to:

- Use configuration files
- Save and recall Set-Up selections
- Receive and autotype characters using files

Using Configuration Files

The VT220 emulator allows you to save Set-Up settings in a Set-Up configuration file. You can have several of these files, each specifying different settings.

What the VT220 Emulator Does

When you start the VT220 emulator, it looks for the default Set-Up configuration file named DEFAULT.220. When found, this file configures your VT220 emulator with the initial values of all Set-Up selections.

If the VT220 emulator does not find the DEFAULT.220 file, it configures your VT220 emulator with the factory default settings instead.

What You Can Do

When starting the VT220 emulator, you can direct it to run a Set-Up configuration file other than DEFAULT.220.

You can also run configuration files after you start the VT220 emulator. To do this, use the Recall Set-Up Parameters as described in this chapter.

These Set-Up configuration files need not reside in the current directory. You can precede configuration file names with a directory path. For more information about appropriate file naming, see the *MS-DOS Reference Guide.*

Specifying Set-Up Configuration Files on Startup

To specify a Set-Up configuration file when you start the VT220 emulator, do one of the following:

- Select the Run command.

  A dialog box requests the name of the application you want to run.

  Type VT220 followed by a space and the name of the desired configuration file. The .220 is the default extension if none is given.

  Click on the Ok command button.

- The standard WIN.INI file distributed with your system associates the file extension .220 with the VT220 emulator. This lets you run Set-Up configuration files with a .220 extension as if they were the VT220 emulator.

  You click on the Set-Up configuration file in the MS-DOS Executive window and start the emulator with the settings contained in that Set-Up configuration file.

You can also save or start Set-Up configuration files after you start the VT220 emulator. To do this, use either the Save Set-Up Parameters or the Recall Set-Up Parameters selection from the Action screen.

Saving and Recalling Set-Up Files

After you select the desired Set-Up settings, you can save and recall them from the default file, DEFAULT.220, or a file you specify.

When you start the VT220 emulator, it looks for one of these files and initializes the emulator to the values contained in that file.

Saving VT220 Selection Settings

To save your VT220 Set-Up selections:

1. Select the Actions screen.
2. Click on the Save Set-Up Parameters.

   A dialog box asking for a file name is displayed. The dialog box either displays the default file name or the last file name you entered. You may edit this file name or replace it.

   NOTE
   If you select a currently displayed file, any settings you made replace any existing settings in that file.

3. To save your settings in the new or selected file, click on the Ok command button.

Recalling VT220 Selection Settings

To recall VT220 selection settings under Set-Up:

1. Select the Actions screen.
2. Click on the Recall Set-Up Parameters.

   A dialog box is displayed asking for a file name. It will also either display the default file name or the last file name you entered. You may edit this file name or replace it.

3. To recall saved settings from the selected file, click on the Ok command button.

Receiving Characters from the Host Into a File

The status portion of your screen indicates whether session logging is active or idle during this process.

To receive or log characters from a host into a file using session logging:

1. Select the Actions screen.
2. Click on the Receive File selection.

   A drop-down menu displays the Receive File options.
3. Select the Open File or the Open and Append File option.

   A dialog box asks for the name of the file you want to receive the characters.
4. Type in the file name.
5. To begin receiving characters into the file, click on the Ok command button.
6. To stop receiving and close the file, select Close File from the Receive File menu.

   To suspend reception of characters without closing the file, you can alternately select On and Off from the Receive File menu.

Autotyping Characters to the Host

The status portion of your screen indicates whether autotyping is active or idle during this process.

When a file is autotyped to VMS, you must enable HOSTSYNC under VMS by typing:

```
$ SET TERMINAL/HOSTSYNC Return
```

This prevents data overruns on a VAX/VMS host.

To autotype characters to the host from a file as if you entered them from the keyboard:

1. Select the Actions screen.
2. Select Send File.
3. Select the Open File option.

   A dialog box is displayed asking for the name of the file you want to autotype.
4. Type in the file name.
5. To begin autotyping the specified file to the host, click on the Ok command button.

   File autotyping stops when the end of the file is reached.

   You can also stop autotyping the file by selecting Close File from the Send File menu.

Chapter 13
Scripting for Advanced VT220 Users

A *script* is a text file containing sets of commands to perform a function automatically, such as:

- Logging into a host computer
- Running an automated billing procedure
- Dialing into a remote computer to retrieve information

This chapter describes:

- Writing a script
- Script file examples
- Running a script file
- Troubleshooting a script
- Script commands

To use the script processor, you should be familiar with a VT220 terminal emulator and the VT220 Set-Up features described in Chapters 11 and 12. You should also be familiar with using script processors.

Writing a Script

When you write a script, use these guidelines:

1. Manually perform the task you want to automate, and as you do each step, write down the keystrokes and any response times.
2. Determine the basic structure of the script. Scripts usually consist of:
   - An introductory part containing commands like BAUD RATE: and PARITY: to set up the communications line.
   - A main part containing a dialog between your workstation and the remote computer.
   - Sections for error handling.
   - An exit or end of script section.
3. Debug the script.

   Use the DEBUG and ECHO commands to check for problems with scripts.
   - DEBUG displays each command on the workstation screen as it is performed.
   - ECHO displays everything that comes through the communications line to the workstation.
4. Check the timing.

   Using the system response times you write down, you can add the TIMER and PAUSE commands to your script. You can increase some of the TIMER and PAUSE values in your script to allow for times when the remote computer is unusually slow.

   NOTE

   When using the ECHO or DEBUG commands, take into account the time it takes to display characters on the screen when you specify timer values. ECHO and DEBUG can display enough extra characters to cause timeouts that would not occur otherwise.

5. Handle flow control.

   Use the ON ERROR, SKIP ON, and RETRY commands to handle problems that might occur. For example, when you autodial a modem to connect to a remote computer, retry that portion of the script 10 times if the remote computer does not answer.

6. Give the script an file name with a .SCR extension.

7. Test the script.

   Make sure your script runs in the environment for which it is intended.

   Scripts that are called using CHAIN or SCRIPT can work differently when run from the main script than when run by themselves.

   Remove all DEBUG commands and leave ECHO commands only where you need to see what messages your workstation is receiving.

Scripting Examples

This section contains two examples of scripts.

> **NOTE**
> Each example contains a sequnces of characters that must be typed to send codes used by the script processor to generate a carriage return. The sequence is:
>
> <CR>

Logging into a VAX/VMS Account

The following script example is used to:

- Log into a VAX/VMS account
- Place all new mail in a file
- Print the file on the VAX's printer

```
COMMENT:  This is a sample script showing some of the features
COMMENT:  that are part of the script processor.

LOAD: I:\VT220\SCRIPT\VIKING.220
TIMER: 60

COMMENT: The LOAD: command sets up the user's VT220 emulator
COMMENT: with appropriate communications parameters.  Also
COMMENT: notice the MS-DOS pathname.  The TIMER: command is
COMMENT: set to allow enough time for any system notices or
COMMENT: banners to display after prompting the user for a
COMMENT: name and password.  The TIMER: command also allows
COMMENT: for enough time if large amounts of mail messages
COMMENT: are extracted later in the script.

RETRY: 4

COMMENT: RETRY: allows the user four chances to log in to the
COMMENT: system.  These retries allow for the possibility of
COMMENT: a timeout occurring while the emulator waits for the
COMMENT: Username and Password prompt.
```

```
SEND: <CR><CR>
WAIT FOR:Username:
SEND:MCCARRON<CR>
WAIT FOR:Password:
TYPE UNTIL:<CR>

COMMENT: These commands automatically enter the username,
COMMENT: but require the user to type the password.
COMMENT: Interactively typing the password prevents someone
COMMENT: else from reading the password in a file.

WAIT FOR:$
SEND: MAIL <CR>
RETRY:0

COMMENT: When the user is logged in, these commands invoke
COMMENT: the MAIL utility.

ON ERROR:
   GOTO: $NO_NEW_MAIL
END ON ERROR:

WAIT FOR:new message

COMMENT: If the user has new mail, the MAIL utility displays
COMMENT: ``You have n new messages''.  The ``n''
COMMENT: is the number of mail messages you have.

COMMENT: If there is no new mail, a timeout occurs while
COMMENT: waiting for the new message.  Because there is an
COMMENT: ON ERROR: command in the script file, control
COMMENT: passes to the $NO_NEW_MAIL label.

WAIT FOR:MAIL>
SEND: <CR>
WAIT FOR:MAIL>
SEND: EXTR/ALL NEWMAIL.TXT <CR>
WAIT FOR:MAIL>
SEND: EXIT <CR>
WAIT FOR:$

COMMENT: If there is new mail, these commands store the mail
COMMENT: in a file, exit the  MAIL Utility, and return the
COMMENT: user to the command level prompt.
```

```
SEND: PRINT NEWMAIL.TXT <CR>
WAIT FOR:$
SEND:LOGOUT <CR>
EXIT:

COMMENT: These commands print the file containing the new
COMMENT: mail and log out the user.

COMMENT:  ERROR ROUTINE.

$NO_NEW_MAIL:
DISPLAY:  NO NEW MAIL. <CR><LF>
SEND: EXIT <CR>
WAIT FOR:$
SEND:LOGOUT <CR>
EXIT:

COMMENT: If there was no new mail, inform the user
COMMENT: and then logout.
```

Processing a Weekly Progress Report

The following script example is used to automate a manager's weekly task of receiving progress reports from his staff.

The script covers:

- Sending out Monday reminders to the staff
- Collecting the mailed reports on Tuesday

The script assumes the worksation is connected to a DECserver 100 using a serial port.

```
COMMENT:              Progress Report Script

COMMENT: This script facilitates the process of organizing
COMMENT: the weekly progress reports a manager receives from
COMMENT: his employees.

TIMER: 60
RETRY: 4

COMMENT: Resets the timer from the default of 15 seconds to
COMMENT: 60 seconds in case more time is needed for logging
COMMENT: onto the host computer.  If the host does not respond
COMMENT: in 60 seconds retry 4 times before quitting.

PORT:       DATA-1
BAUD RATE:  9600
DISCONNECT: 2
DATA BITS:  8
PARITY:     NONE

COMMENT: Sets communications parameters.

BREAK:

COMMENT: Send a break signal to return to the DECserver
COMMENT: 100's local mode.

WAIT FOR: Local>
SEND: Connect VAX <CR>

COMMENT: Establish a connection to a valid terminal service.

WAIT FOR: Username:
SEND: MCCARRON<CR>
WAIT FOR: Password:
DISPLAY: Password:
TYPE UNTIL: <CR>
```

```
COMMENT: These commands automatically enter the username,
COMMENT: but require the user to type the password.
COMMENT: Interactively typing the password prevents
COMMENT: someone else from reading the password in a file.

DISPLAY:  <CR><LF> Logging into VAX... <CR><LF>
WAIT FOR: $

COMMENT: Let the user know if the login is successful,
COMMENT: then wait for the system prompt.

$MAIN:
 TIMER: 15
 RETRY: 0
 ECHO:
 DISPLAY: Weekly Progress Report Script. <CR><CR><CR><LF>
 DISPLAY: Day - (M)onday, (T)uesday, (0)Exit:  <CR><LF>

COMMENT: Set the timer back to the default and end any
COMMENT: retries, then turn on local echo allowing host and
COMMENT: user input to display.  Display the title of the
COMMENT: script and indicate the choices available
COMMENT: to the user for the day of the week.

$GET_DAY:
 DISPLAY: <CR><LF> Choose day:
 READ: DAY_OF_WEEK

COMMENT: The label ``$GET_DAY'' is defined before the day
COMMENT: of the week is entered.  This allows control to
COMMENT: return to this label if an invalid date is entered.
COMMENT: Prompt the user for the day and store the value
COMMENT: in DAY_OF_WEEK.

 CASE: DAY_OF_WEEK
    "M"        SCRIPT: M:\VT220\TEST\MONDAY.SCR
    "m"        SCRIPT: M:\VT220\TEST\MONDAY.SCR
    "T"        SCRIPT: M:\VT220\TEST\TUESDAY.SCR
    "t"        SCRIPT: M:\VT220\TEST\TUESDAY.SCR
    "0"        GOTO: $EXIT
    DEFAULT:   GOTO: $ERROR
 CASE END:

COMMENT: Use the CASE: command to process the day of the week.
COMMENT: If a valid choice is entered, process the matching
COMMENT: script.  MONDAY.SCR sends the reminder mail message.
COMMENT: TUESDAY.SCR reads all the new mail and puts it
COMMENT: in a file.

COMMENT: If an invalid choice is entered, begin error
COMMENT: processing.
```

```
 GOTO: $EXIT:

COMMENT: Perform the exit routine after the CASE: command is
COMMENT: finished.

COMMENT:  ERROR ROUTINE.

$ERROR:
 DISPLAY: Illegal day. Please enter correct day code.<CR><LF>
 GOTO: $GET_DAY

COMMENT: If there are no matches for the day entered by
COMMENT: the user, display a message indicating the problem
COMMENT: and request the user to try again.

COMMENT:  EXIT ROUTINE.

$EXIT:
 DISPLAY: Finished. Return to (A) VT220 or (B) MS-DOS Executive.
 READ: EXIT_CHOICE

COMMENT: Tell the user the script is done.  Ask how the user
COMMENT: wants to leave the script by offering two choices.

 CASE: EXIT_CHOICE
    "A"       EXIT:
    "a"       EXIT:
    "B"       EXIT EMULATOR:
    "b"       EXIT EMULATOR:
    DEFAULT: EXIT:
 CASE END:

COMMENT: When the script is finished, allow the user two
COMMENT: return options.  These options are to return to
COMMENT: the VT220 emulator application or to the MS-DOS
COMMENT: Executive.
```

Running a Script

This section describes how to run a script using any of the following:

- The Script command—the VT220 emulator system menu box that lets you specify a script file.
- A field in the VT220 Actions Set-Up screen—lets you specify a script file to run when you exit VT220 Set-Up.
- A script file—included on the command line when running the emulator. The procedure is similar to specifying a default Set-Up file.

This section also describes how script processing ends.

Starting a Script from the System Menu Box

To start a script from the System Menu box:

1. Click on the System Menu box.
2. Click on the Script selection.
3. Type the name of your script file in the dialog box.
4. Press the Return key.

Starting a Script from Actions Set-Up

To start a script from the Actions Set-Up screen:

1. Access the VT220 Actions Set-Up.
2. Click on the Script selection.
3. Type the name of your script file in the dialog box.
4. Press the Return key.
5. Exit Set-Up.

Starting a Script from the MS-DOS Prompt

To start a script from the MS-DOS system prompt when starting the VT220 emulator, type:

```
C:\>WIN VT220 filename.scr Return
```

If this method is used, you must include the .SCR extension.

Ending a Script Process

A script process ends when one of the following occurs:

- The script processor reaches the last line in a script.
- The processor reaches a timeout condition without an ON ERROR: command to process.
- The processor reaches the EXIT, EXIT ON, EXIT EMULATOR, or EXIT EMULATOR ON commands.
- You type the Ctrl/C sequence at the keyboard. The Ctrl/C sequence is ignored while a TYPE UNTIL command is in effect.

Troubleshooting Your Scripts

After each script command is processed, it returns a status which records a code in the variables **Error_Number** and **Error_Message** (see Table 13-1 for the messages associated with these variables). These variables are accessed like any other variable in a script (see the SET: and READ: commands in this chapter).

The Error_Number contains the returned status code, while the Error_Message contains a descriptive comment related to the Error_Number. If a command processes successfully, the Error_Number is 0, and the Error_Message is "Command successfully completed."

Using these variables, you can create error handling routines to:

- Stop the script on a specific error
- Make some changes and continue processing

When a script encounters an error, the screen displays:

```
%SCR - Error.  Check ERROR.LOG for explanation.
```

The script continues processing, and an ERROR.LOG file is created and stored in the current directory. The file is in the following format:

```
COMMAND LINE:
ERROR_MESSAGE: -- [string] -- n
```

Where:

command line:	Is the text of the line that caused the script to fail.
Error_Message:	Is the message associated with the error.
[string]	Is any text, such as an actual command, associated with the message.
n	Is the number of the script line causing the script to fail.

For example:

```
DISCONCT: 60
Illegal Command -- DISCONCT -- Line #23
```

Table 13–1: File Logging Messages

Error_Number	Error_Message
0	Command Successfully Completed
1	Illegal Command
2	Timeout
3	Non-numeric Parameter
4	Invalid Parameter
5	Incompatible Settings
6	Not implemented in VT220
7	Service not available
8	Cannot find
9	END ON ERROR not found
10	ON ERROR not found
11	CASE END not found
12	MS-DOS command failed - Not enough memory.
13	Print Error
14	Label not found
15	Logfile already open
16	No logfile open
17	File Transfer Error
18	Variable not found
19	Comm Port not available
20	Nested ON ERROR routines not allowed
21	Error in Error routine
22	Error in CASE routine

Scripting Commands

Use the following syntax for script commands:

```
COMMAND: [parameter]
```

Where:

[]	Indicates optional items in the syntax.
. . .	A vertical series of periods, or an ellipsis, indicates that not all the data that the system would display is shown or that not all the data you would enter is shown.
COMMAND:	Is one of the script commands listed in this chapter. The colon must follow the last letter in the command to separate the command from its parameter, and each command must be on a separate line. You can type the characters in either upper or lowercase. Leading spaces are ignored.
parameter	Specifies what the script command acts upon. The script command definitions describe the parameter values for the appropriate commands. Command parameters include file specifications (filename), numeric values (n), strings (string), or variables (var).
	File specifications are in MS-DOS format. If you do not specify a path, the script processor searches the current directory and then the MS-DOS path. If you omit the file name, the script processor uses the default file name (if one exists).
	Strings and assigned variable strings consist of a series of ASCII characters.

Comments

The total length of the command and its parameter must not exceed 80 characters. Valid characters include all displayable and non-displayable characters (see Appendix E for non-displayable character codes). Non-displayable characters count as one character out of the 80 allowed characters.

Without the colon, the command is not recognized as a command, and a message is displayed indicating there is no command on the line.

BAUD RATE

Sets the rate at which characters are transmitted or received.

Format

```
BAUD RATE: n
```

Where:

n	Is any of the following BAUD rates: 50, 75, 110, 134, 150, 300, 600, 1200, 1800, 2000, 2400, 3600, 4800, or 9600.

Comments

When Network is selected, you cannot use BAUD RATE, DATA BITS, DISCONNECT, PARITY, STOP BITS, and XON/XOFF commands. These fields are automatically set and cannot be changed.

Example

```
BAUD RATE: 4800
```

Sets the rate to 4800 baud for character transmission or reception.

BREAK

Sends a break signal (as if you had pressed the Break key) over the communication line for tenths of a second.

Format

```
BREAK: n
```

Where:

n	Indicates tenths of a second. You can also use the logical names SHORT (0.24 sec) or LONG (3.5 sec). The network connection has a fixed break of .274 seconds. The default is SHORT.

Example 1

```
BREAK: 5
```

Specifies a half second break.

Example 2

```
BREAK: SHORT
```

Specifies a SHORT break.

CASE
CASE END

Uses a variable already declared and assigned through the SET or the READ command to select options in a script. Following the variable is a series of lines. Each line contains a string, surrounded by quotes, and followed by a script command. When processing a CASE command, each string is examined, and the command associated with the first string matching the variable is processed. All other strings are ignored. Strings are also case sensitive.

Format

```
CASE: [var]
        "stringn" commandn
        DEFAULT: command
CASE END:
```

Where:

var	Is the variable defined using the SET or READ commands.
stringn	Is any number (n) of strings one of which matches the previously defined variable. Each string must be surrounded by quotes and associated with a script command.
commandn	Is any number (n) of script commands to be run when an associated string matches a previously defined variable.
command	Is the DEFAULT command to run during script processing if no matches are found in the CASE construct.

Comment

You can use a DEFAULT command to process a command if there are no matches. The DEFAULT command is only used within a CASE command construct. If neither a DEFAULT command nor a match is found, the whole CASE construct is ignored. The CASE construct must be ended by a CASE END command.

Example

```
SET: LOANS CARS
CASE: LOANS
          "CARS" GOTO: $CARS
          "HOMES" GOTO: $HOMES
          "BUSINESS" GOTO: $BUSINESS
          DEFAULT: GOTO: $END
CASE END:
```

Defines a varibale using the SET command, then the CASE command lists a series of strings with a corresponding script command to process.

CHAIN

Calls another script file that, when completed, ends all script processing and returns you to either the VT220 emulator or the MS-DOS operating system. This command is similar to the GOTO command, except the destination is a script file and not a string.

Format

```
CHAIN: [filename]
```

Where:

filename Is the name of the script file.

Example

```
CHAIN: TEST1.SCR
```

Calls in a script called TEST1.SCR.

CLEAR LINE

Clear all data from the communications-line-received queue.

Format

```
CLEAR LINE:
```

Example

```
CLEAR LINE:
```

COMMENT

Lets you include comments within the script. The line is ignored and processing continues on the next line.

Format

```
COMMENT: [string]
```

Where:

string — Is ASCII text used to describe the purpose of script command or a series of script commands or simply to make notes in the script itself. Each line of the text must begin with the COMMENT command. The text is ignored by the script processor.

Example

```
COMMENT: This line calls in a script to run the tax percentages for the
COMMENT: monthly payroll.
```

DATA BITS

Sets the number of data bits transmitted and received.

Format

```
DATA BITS: n
```

Where:

n — Is 7 or 8 bits.

Comments

When Network is selected, you cannot use the BAUD RATE, DATA BITS, DISCONNECT, PARITY, STOP BITS, and XON/XOFF commands. These fields are automatically set and cannot be changed.

Example

```
DATA BITS: 8
```

Sets the number of data bits to 8 bits a second.

DEBUG
NO DEBUG

Displays each line of the script file as it is processed. The default is NO DEBUG, which turns off DEBUG.

Format

```
DEBUG:
NO DEBUG:
```

Example

```
DEBUG:
SEND: DIR <CR>
WAIT FOR: $
SEND: COPY A.TXT B.TXT <CR>
NO DEBUG:
```

Checks each line of the script file as it processes for any errors.

DIAL

Works like the Shift/F4 key to simplify the process of dialing a phone number using a modem.

Format

```
DIAL: [string]
```

Where:

string — Is either a telephone number or a letter between A and J. The letters (A-J) correspond to phone numbers stored in the VT220 Telephone Set-Up screen.

Example 1

```
DIAL: E
```

Automatically dials a number assigned to the letter "E."

Example 2

```
DIAL: 6171300
```

Automatically dials the number 617-1300.

DISCONNECT

Determines the length of time between the lost carrier signal and loss of the modem line. Use this command with a modem.

Format

```
DISCONNECT: [n]
```

Where:

n Is either 2 seconds or 60 milliseconds.

Example

```
DISCONNECT: 60
```

Drops the connection between the modem and the communications line after 60 milliseconds.

Comments

When Network is selected, you cannot use BAUD RATE, DATA BITS, DISCONNECT, PARITY, STOP BITS, and XON/XOFF commands. These fields are automatically set and cannot be changed.

DISPLAY

Displays a character string on the terminal screen. The string is displayed on the next line.

Format

```
DISPLAY: [string]
```

Where:

string Is a series of ASCII characters you enter at the terminal.

Example

```
DISPLAY: START NOW
```

Displays the line "START NOW" on the workstation screen.

DTR

Clears the Data Terminal Ready (DTR) signal.

Format

```
DTR CLEAR:
```

Example

```
DTR CLEAR:
```

DTR SET

Sets the Data Terminal Ready (DTR) signal.

Format

```
DTR SET:
```

Example

```
DTR SET:
```

ECHO
NO ECHO

Displays all the characters transmitted or received on the communication line. The default is NO ECHO, which turns off ECHO and stops the script processor from displaying characters sent from the host. Use ECHO to resume the display of characters.

Format

```
ECHO:

NO ECHO:
```

Example

```
WAIT FOR:Password:
SEND:mypassword<CR>
WAIT FOR:$
DISPLAY:Connected and logged in<CR>
ECHO:
```

Allows the user to enter a password when the default (NO ECHO) is set. Displays a message to indicate that the password was accepted and then sets ECHO to continue screen display.

EXIT

Ends processing of the current script. If the current script was run using the SCRIPT command, control returns to the calling script; otherwise, control returns to the VT220 emulation application.

Format

```
EXIT:
```

Example

```
EXIT:
```

EXIT EMULATOR

Ends processing of the current script and any calling scripts. The VT220 emulator application is closed, and you are returned to MS-Windows.

Format

```
EXIT EMULATOR:
```

Example

```
EXIT EMULATOR:
```

EXIT EMULATOR ON

Ends the processing of the script and any calling scripts when a string sent from the host computer. When the string is received, the VT220 emulator application is closed, and you are returned to MS-Windows.

If a timeout occurs before the matching string is sent, processing continues on the next line of the script.

Format

```
EXIT EMULATOR ON: [string]
```

Where:

string Is a series of ASCII characters.

Example

```
EXIT EMULATOR ON: DEBITS
COMMENT: If no debits, continue processing
GOTO: $CREDITS
```

Ends script processing when the string "DEBITS" is received from the host computer.

EXIT ON

Ends the processing of the current script when a string is sent from the remote computer. If the current script was run using the SCRIPT command, control returns to the calling script; otherwise, control returns to the VT220 emulator application.

If a timeout occurs before the matching string is sent, processing continues on the next line of the script.

Format

```
EXIT ON: [string]
```

Where:

string — Is a series of ASCII characters.

Example

```
EXIT ON: DEBITS
COMMENT: If no debits, continue processing
GOTO: $CREDITS
```

Ends script processing when the string "DEBITS" is received from the host computer.

FPRINT

Prints the specified file on the printer to which your workstation is connected.

Format

```
FPRINT: [filename]
```

Where:

filename — Is the name of the script file. If you omit the file name, the script processor uses the default file DEFAULT.TXT (if one exits).

Example

```
FPRINT:A:\>TEST.TXT
```

Searches the specified MS-DOS path and prints the file TEST.TXT.

GOTO

Goes to the line in the script containing a string and continues processing from that point in the script.

Format

```
GOTO: $[string]
```

Where:

string — Is a series of ASCII characters beginning with a $ that indicates a destination for the GOTO command.

Example

```
GOTO: $ACCOUNTS
```

Causes the script processor to search for a line containing the string $ACCOUNTS and to continue processing at that point in the script.

HANG UP

Clears the DTR signal.

Format

```
HANG UP:
```

Example

```
SEND: LOGOUT<CR>
HANG UP:
DIAL: E
```

Specifies the end of one modem session and the beginning of a new one.

KEYBOARD ON
KEYBOARD OFF

Prevents data from the keyboard from being used as input during script processing. The default is KEYBOARD ON, which allows data from the keyboard as input during script processing.

Format

```
KEYBOARD ON:

KEYBOARD OFF:
```

Example

```
KEYBOARD OFF:
SEND FROM: TEST2.TXT
KEYBOARD ON:
```

Disables any keyboard input while the contents of a file is sent. When the file has been sent, keyboard input is enabled.

LOAD

Replaces all existing VT220 settings with values you saved in a VT220 Set-Up file. The default file is DEFAULT.220.

Format

```
LOAD: [filename]
```

Where:

filename — Is a VT220 Set-Up file containing new Set-Up values. For more information on VT220 Set-Up files, see Chapter 11.

Example

```
LOAD: NETWORK.220
```

Replaces any existing VT220 Set-Up vales with a new set of values contained in the VT220 Set-Up file NETWORK.220.

NTS

If Network is selected with the PORT command, you must select a Network Terminal Service (NTS) in VT220 Set-Up.

Format

```
NTS: [string]
```

Where:

string Is a selection from a list of available Network Terminal Services.

Example

```
NTS: LATCOM
```

ON ERROR
END ON ERROR

Marks the beginning of a segment of script code that is to be processed when an error condition is discovered. The END ON ERROR command marks the end of the segment. The code in between is ignored during normal processing and is processed only after an error code is returned. If, when the error routine is processed, the END ON ERROR command is reached, processing continues on the line following the command that caused the error.

You cannot use nested ON ERROR/END ON ERROR commands. If both the ON ERROR and RETRY commands are in the file, the retries are processed until the retries run out, then the ON ERROR command is processed. If there is no RETRY command, just the ON ERROR command is processed.

Format

```
ON ERROR:
    .
    .
    .
END ON ERROR:
```

Example

```
ON ERROR:
GOTO: $CLEANUP
END ON ERROR:
```

If an error occurs, go to the $CLEANUP label and perform cleanups, then exit.

OPEN
CLOSE

Opens a log file to capture all text sent on the communications line. Only one log file at a time can be opened during any one script session. If any other log file exists, it is overwritten unless you save it by renaming the file. You must use the CLOSE command to close a session log file opened by the OPEN command.

Format

```
OPEN: [filename]
   .
   .
   .
CLOSE: [filename]
```

Where:

filename — Is the name of the log file containing text received on the communications line. The default file is SESSION.LOG.

Example

```
OPEN: JOHN.LOG
PRINT SCREEN:
CLOSE: JOHN.LOG
```

Opens the file JOHN.LOG and types a file onto the screen and into the log file. After the file is displayed, it is closed.

PARITY

Sets the parity.

Format

```
PARITY: [string]
```

Where:

string — Is any of the following selections: None, Even, Even No Check, Odd, Odd No Check, Mark, or Space.

Comments

When Network is selected, you cannot use BAUD RATE, DATA BITS, DISCONNECT, PARITY, STOP BITS, and XON/XOFF commands. These fields are automatically set and cannot be changed.

Example

```
PARITY: NONE
```

Indicates to the processor that there will be no parity checking on the communications line.

PAUSE

Suspends processing for a specified length of time.

Format

```
PAUSE: n
```

Where:

n — Is the time in hours, minutes, and seconds (HH:MM:SS). You can omit any of the fields (HH:MM:SS) but must include the colons. If a field is omitted, the script processor uses the default value of 0.

Example 1

```
PAUSE: 0:0:30
```

Specifies a 30 second pause.

Example 2

```
PAUSE: 0:5
```

Specifies a 5 minute pause.

Example 3

```
PAUSE: 2
```

Specifies a 2 hour pause.

PORT

Selects the type of port.

Format

```
PORT: [string]
```

Where:

string — Is any of the following: Data-1 (Port 1, data leads only), Modem-1 (Port 1, full modem support), Data-2 (port 2, data leads only), Modem-2 (Port 2, full modem support), Integral-2 (Port 2, integral modem), or Network

Comments

When Network is selected, you cannot use the BAUD RATE, DATA BITS, DISCONNECT, PARITY, STOP BITS, and XON/XOFF commands. These fields are automatically set and cannot be changed.

Example

```
PORT: DATA-1
```

Sets port 1 to data leads only.

PRINTER ON
PRINTER OFF

Determines whether the VT220 Auto Print Mode is set. The default is PRINTER OFF, which disables Auto Print Mode.

Format

```
PRINTER ON:

PRINTER OFF:
```

Example

```
PRINTER OFF:
```

PRINT SCREEN

Prints the current screen text on the printer.

Format

```
PRINT SCREEN:
```

Example

```
PRINT SCREEN:
```

PURGE TYPE

Clears all data from the keyboard type-ahead buffer.

Format

```
PURGE TYPE:
```

Example

```
PURGE TYPE:
```

READ

Assigns a string you type from the keyboard to a variable name.

Format

```
READ: [var]
```

Where:

var — Assigns a variable name to string. You must type in the string and end it with a carriage return to tell the script processor to continue processing. The Any previously assigned variable name is overwritten by this command.

Example

READ: LOAN Return

Causes script processing to suspend until the user types a value for the variable "LOAN." Processing continues when a carriage return is entered.

RETRY

Indicates the number of times a script command is run after a timeout. When a timeout occurs, control passes to the line following the RETRY command and script processing continues from that point.

Format

```
RETRY: n
```

Where:

n — Is the number of times a command is processed after a timeout. The default is 0.

Example

```
RETRY: 3
SEND: <CR>
WAIT FOR: Username
```

Make three attempts to connect to a host computer.

SCRIPT

Opens a new script file, processes all its commands and returns control to the next line in the calling script.

Format

```
SCRIPT: [filename]
```

Where:

filename — Is the name of a script file.

Example

```
SCRIPT: RUNTHIS.SCR
```

Processes all the commands in the script file "RUNTHIS.SCR."

SEND

Sends a character string to the remote computer.

Format

```
SEND: [string]
```

Where:

string Is a series of ASCII characters.

Example

```
SEND: GOODBYE <CR>
```

Sends the string "GOODBYE" to the host computer.

SEND FROM

Sends the contents of a file to the remote computer without translating special or non-displayable characters.

Format

```
SEND FROM: [filename]
```

Where:

filename Is the name of a file.

Example

```
SEND FROM: TEST2.TXT
```

Sends the characters contained in the file "TEST2.TXT" to the host computer.

SET

Assigns a string to a variable. Variable and string must be separated by one or more spaces.

Format

```
SET: [var] [string]
```

Where:

var — Is the variable name assigned to a string you specify.

string — Is a series of ASCII characters.

Example

```
SET: LOANS CARS
```

Assigns the string "CARS" to the variable "LOANS."

SKIP

Skips over one or more lines in a script.

Format

```
SKIP: n
```

Where:

n — Is the number of lines to be skipped in a script. The default is one.

Example

```
SKIP: 3
```

Skips over three lines of a script file.

SKIP ON
NO SKIP ON

Skips over the next line in a script if the string in the command arrives before the remote computer sends a timeout. If a timeout occurs, the next line in the script is processed.

If NO SKIP ON is used, the next line in the script is processed if the string arrives before the timeout period ends.

Format

```
SKIP ON: [string]
```

Where:

string — Is a series of ASCII characters.

Example

```
SKIP ON: OWES MONEY
```

If the host computer sends the string "OWES MONEY" the script processor skips to the next line in the file.

STOP BITS

Sets the number of stop bits.

Format

```
STOP BITS: n
```

Where:

n	Is either 1 or 2.

Comments

When Network is selected, you cannot use the BAUD RATE, DATA BITS, DISCONNECT, PARITY, STOP BITS, and XON/XOFF commands. These fields are automatically set and cannot be changed.

Example

```
STOP BITS: 2
```

Sets the stop bits to two.

SYSTEM

Processes the MS-DOS operating system command specified in the string. For more information on using MS-DOS commands in MS-Windows, see Chapter 3.

Format

```
SYSTEM: [string]
```

Where:

string — Is an MS-DOS operating system command.

Comments

When you use the SYSTEM command in a script, MS-Windows creates a window that runs COMMAND.COM which in turn runs the DOS command and then ends. However, the window is still open on exiting, and script processing is suspended until the window is closed.

To close the window, do one of the following:

- From within the MS-Windows COMMAND window, use the System menu CLOSE command.
- Use PIFEDIT to create a .PIF that automatically closes COMMAND upon exiting. For information on creating .PIFs, see Appendix C.

  The COMMAND.PIF you create should contain the following:

Program Name	COMMAND
Memory Requirements	32
Program Switch	Text
Screen Exchange	Text
Close Window on Exit	Yes

You must also delete the following line in the WIN.INI file under the [PIF] heading:

```
COMMAND.COM=32
```

Example

```
SYSTEM: RESTORE
```

Tells the script processor to run RESTORE, an MS-DOS operating system command.

TIMEOUT

Forces an unconditional timeout. The timeout causes the script to run any existing error routines or to end script processing.

Format

```
TIMEOUT:
```

Example

```
TIMEOUT:
```

TIMER
TIMER OFF

Sets the time in seconds that the system waits for a correct response from the host computer. TIMER OFF turns off the timeout period set by the TIMER command, which disables timeouts.

Format

```
TIMER: n
```

```
TIMER OFF:
```

Where:

n	Is the time in seconds. The default is 15 seconds.

Example

```
TIMER: 10
WAIT FOR: Hello
```

Indicates that the system is to wait 10 seconds for the string "Hello" to be sent from the host computer.

TYPE UNTIL

Sends a string of any length from the keyboard through the communication line until the terminating string specified in the command is typed. Script processing then begins on the next line of the script.

Format

```
TYPE UNTIL: [string]
```

Where:

string — Is a series of ASCII characters.

Comment

If you type the Ctrl/C sequence at the keyboard, the sequence is ignored if a TYPE UNTIL command is in effect.

Example

```
TYPE UNTIL: DONE
```

Puts the VT220 into terminal emulation mode until the user types "DONE."

WAIT FOR

Suspends processing until the remote computer sends a string specified in the command or until a timeout occurs. All data sent before the string is found is ignored.

Format

```
WAIT FOR: [string]
```

Where:

string — Is a series of ASCII characters.

Example

```
WAIT FOR: RESUME SENDING DATA
```

Puts script processing on hold until the string "RESUME SENDING DATA"is sent by the host computer or until a timeout occurs.

XON/XOFF
NO XON/XOFF

Responds to XON/XOFF in script processing. NO XON/XOFF ignores XON/XOFF in script processing.

Format

```
XON/XOFF: n
```

```
NO XON/XOFF
```

Where:

n	Is the rate at which characters are received from the host. The rates are: 64, 256, 512, or 1024.

Comments

When Network is selected, you cannot use the BAUD RATE, DATA BITS, DISCONNECT, PARITY, STOP BITS, and XON/XOFF commands. These fields are automatically set and cannot be changed.

Example

```
XON/XOFF: 64
```

Sets the XOFF point to 64 bits.

Chapter 14
Using Notepad

MS-Windows Notepad is a desktop application that lets you create, modify, and display text files. Although you usually use Notepad to write notes or short memos, you can also create and edit batch files.

This chapter contains information on how to:

- Start Notepad
- Type and format text
- Scroll
- Edit Notepad text
- Work with Notepad files

Starting Notepad

To start Notepad when it is neither in a window nor set aside as an icon in the icon area, use Run command from the File menu in the MS-DOS Executive window. If the MS-DOS Executive is not a window, you must expand its icon into a window.

To start Notepad:

1. Select the Run command from the File menu in the MS-DOS Executive window.

   MS-Windows displays a dialog box.

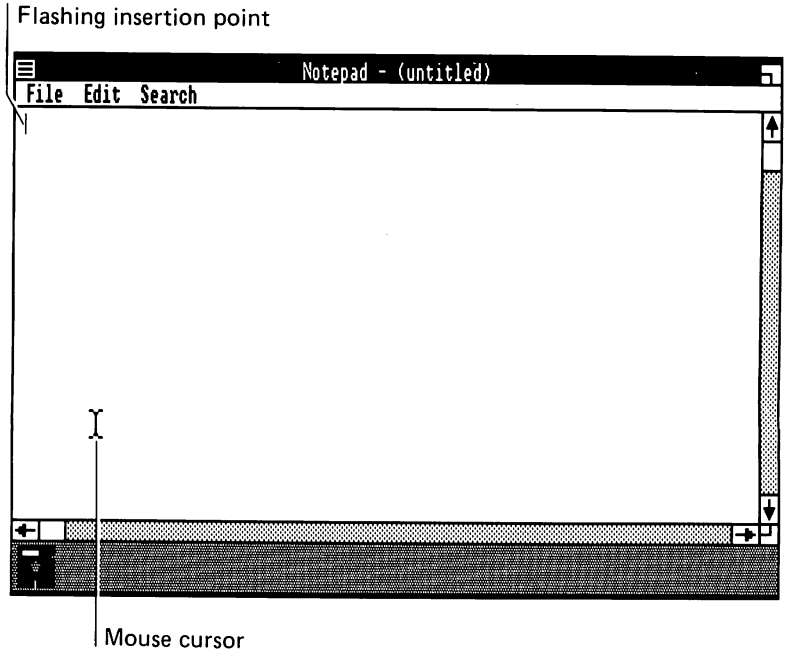
2. Type:

   NOTEPAD

3. Select the Ok command button.

When you start Notepad, it creates an empty, untitled window in which you can type text. Figure 14–1 shows the Notepad window.

Figure 14–1: Notepad Window



Typing Text

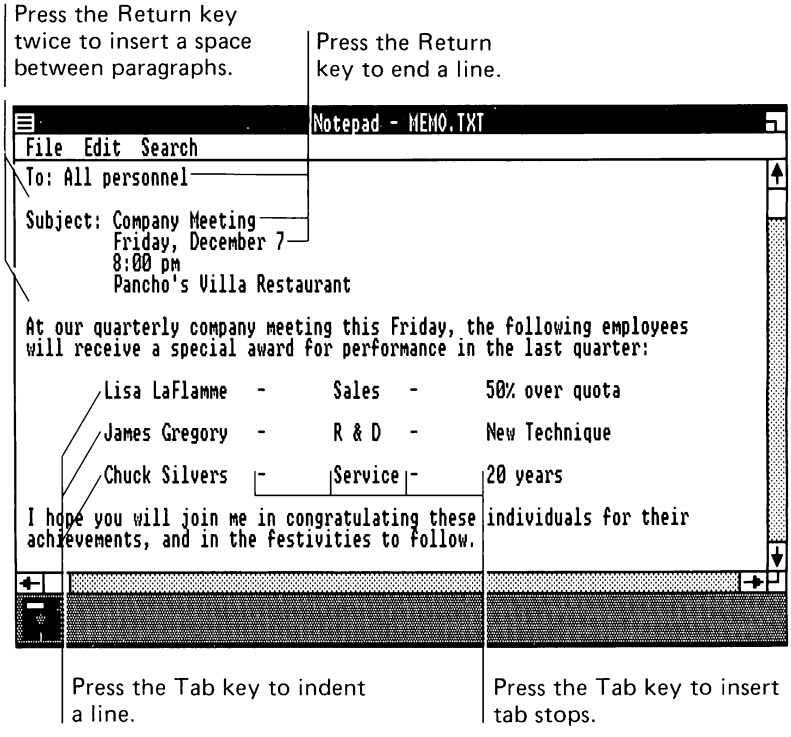
You can type in the Notepad window whenever it is active. Notepad enters text at the insertion point, which initially is displayed in the upper-left corner of the Notepad window. It moves to the right as you type.

Text is encoded in its ANSI representation. For more information about ANSI text representations, see Appendix G.

Formatting Text

To format text with Notepad, type the text as you want it to display. Figure 14–2 shows how to format text with the Return and Tab keys.

Figure 14–2: Formatting with the Return and the Tab Keys



You can also wrap text automatically at the right edge of the window to continue to the next line. To wrap text, use the Word Wrap command from the Edit menu. To cancel wrapping, use the Word Wrap command again.

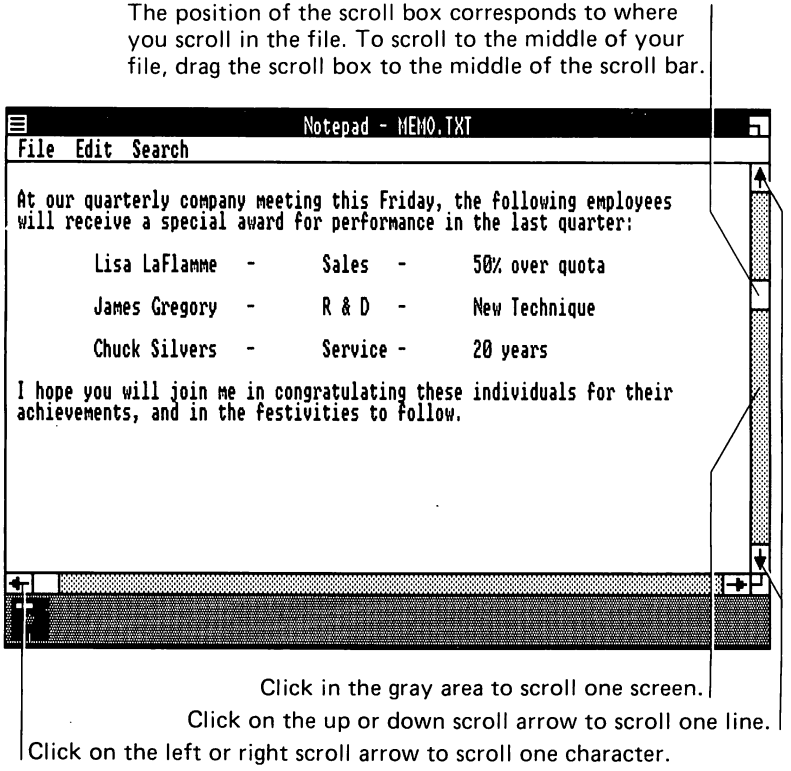
Scrolling

If you have not set text to wrap and you type beyond the borders of the window, Notepad automatically scrolls the text, to the left or up, so the insertion point remains visible in the window.

When text is too long or too wide to be displayed at one time, you can scroll through the file to view the text.

To scroll a Notepad file, use scroll bars. Figure 14–3 shows the scroll bars.

Figure 14–3: Scrolling



To use the keyboard, press the arrow keys to move the insertion point in the direction you want to scroll. When you reach the edge of the window, press the arrow key again to scroll the window in that direction. Press the Pg Up key to scroll up one screen; press the Pg Dn key to scroll down one screen.

Editing in Notepad

To edit text in the Notepad window, use commands from the Edit menu. You can delete text, move or copy text to a new location, and search for text in a Notepad file.

Notepad loses the first character of a line if the preceding line ends with a carriage return, line feed, carriage return (CR,LF,CR) sequence.

> **CAUTION**
>
> Notepad cannot always edit files created by using other text editors. For example, if the file contains a carriage return (CR) but is missing a line feed (LF), Notepad ignores the first character after the carriage return, assuming that it is a line feed. The character is in the edit buffer, but is not displayed. If you then edit and save the file, the character is lost.

You can also transfer text between Notepad and other applications using the Clipboard. When you delete or copy text with the Notepad Cut or Copy command, Notepad puts the text in the Clipboard. The Notepad Paste command copies information from the Clipboard back into your Notepad file.

The following sections describe how to:

- Move the insertion point
- Select text
- Edit text using the commands from the Edit menu.

Moving the Insertion Point

When you open a Notepad window, an insertion point is displayed. When you work in another window and return to Notepad, the insertion point is displayed where you left it in the Notepad window.

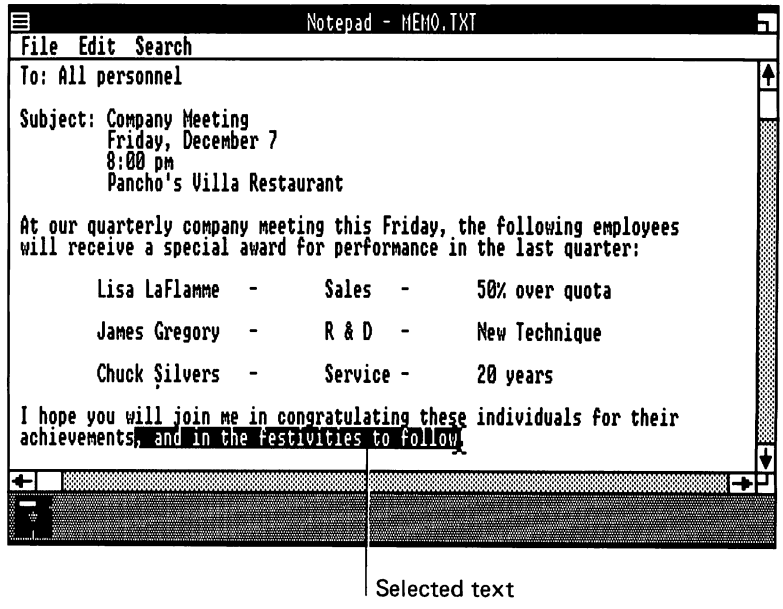
You can move the insertion point whenever there is text or spaces. To move the insertion point, click on the location where you want it.

To use the keyboard, press the arrow keys. Pressing the up or down arrow keys once moves the insertion point up or down one line. Pressing the right or left arrow keys once moves the insertion point one character to the right or left.

Selecting Text

Before selecting a command from the Edit menu, first select the text you want the command to affect. You select text either with the mouse or the keyboard or with the Select All command from the Edit menu. Figure 14–4 shows selected text.

Figure 14–4: Selected Text



Selecting Text with the Mouse or Keyboard

To select text:

1. Point to the beginning of the text you want to select.
2. Drag the mouse over the text you want to select.

   Notepad highlights the selected text.

To use the keyboard:

1. Press the arrow keys to move the insertion point to one end of the text you want to select.
2. While holding the Shift key, press the arrow keys to move the insertion point to the other end of the text you want to select.

   Notepad highlights the selected text.

Selecting Text with the Select All Command

To select all the text in the file, use the Select All command from the Edit menu.

Canceling an Edit

To cancel the most recent edit you made, use the Undo command from the Edit menu. You must use this command immediately after the edit and before you perform any other editing function.

Deleting Text

To delete text:

1. Select the text you want to delete.
2. Select the Clear command from the Edit menu.

   To use the keyboard, press the Shift/Del keys.

   Notepad deletes the selected text.

You can also delete text by copying it to the Clipboard. However, each time you put text in the Clipboard, the new text replaces any information already in the Clipboard. You can copy or paste this text later.

To delete text from Notepad and copy it to the Clipboard:

1. Select the text you want to delete.
2. Select the Cut command from the Edit menu.

   To use the keyboard, press the Del key.

   Notepad copies the text to the Clipboard.

To paste text from the Clipboard into any part of any document:

1. Move the insertion point where you want the text.
2. Select the Paste command.

   To use the keyboard, press the Ins key.

   Notepad pastes the text at the insertion point.

Moving Text

To move text:

1. Select the text you want to move.
2. Select the Cut command from the Edit menu.

   To use the keyboard, press the Del key.

   Notepad moves the selected text to the Clipboard.
3. Move the insertion point where you want the text.
4. Select the Paste command from the Edit menu.

   To use the keyboard, press the Ins key.

   Notepad places the text at the insertion point.

Copying Text

To copy text:

1. Select the text you want to copy.
2. Select the Copy command from the Edit menu.

   Notepad copies the selected text to the Clipboard.
3. Move the insertion point where you want the copied text.
4. Select the Paste command from the Edit menu.

   To use the keyboard, press the Ins key.

   Notepad displays the text at the insertion point.

Finding Text

You can find and change text in a Notepad file with the commands from the Search menu. When you use a Search menu command, you can start searching for text at any point. You can also specify whether Notepad matches uppercase and lowercase characters. The Search menu commands do not search for text in the index line.

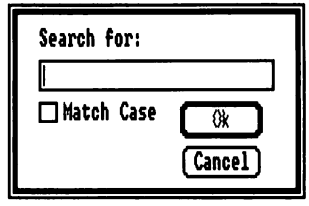
To find text:

1. Move the insertion point where the search begins.
2. Select the Find command from the Search menu.

   To use the keyboard, press Ctrl/F.

   Notepad displays the Find dialog box. Figure 14-5 shows the Find dialog box.

Figure 14–5: Find Dialog Box



3. In the Search For text box, type the text you want Notepad to find.

   Notepad ignores capitalization when it searches for text unless you tell it otherwise.

   To find occurrences of text that have the same arrangement of uppercase and lowercase letters, select the Match Case command.

4. Select the Ok command button to start searching.

   Notepad searches forward from the insertion point and highlights the first occurrence of the specified text. Notepad tells you if the text does not occur after the insertion point.

5. To find further occurrences of the specified text, use the Find Next command from the Search menu.

   To use the keyboard, press the F3 key.

If you use the Find Next command, Notepad immediately searches for the last specified text. With the Find Next command, you can find and edit repeated occurrences of the text you specified with the Find command.

> **NOTE**
> If you use the Find Next command without first using the Find command, Notepad displays the Find dialog box. Type the text you want Notepad to find.

Working With Notepad Files

With commands from the File menu in the Notepad window, you can:

- Open a file
- View files in other directories
- Save a file
- Print a file

You delete files with commands from the File menu in the MS-DOS Executive window. The following sections describe how to use Notepad files.

File Size

As you edit a file, Notepad records how large it is. Notepad shows the size of the file as the percentage of remaining free space. When a file has less than 10 percent free space, you should separate the file into smaller files.

> **NOTE**
> Free space does not refer to the amount of available memory. It refers only to the amount of text you can have in a file.

To see how much free space remains, use the About command from the System menu.

Notepad displays the amount of free space.

Opening a File

You can open new or existing files in the Notepad window. If you open a Notepad file when another file is already open, Notepad closes the file that was already opened. If you have changes that are not saved in the file that was already open, Notepad asks you if you want to save them before it closes the file. Table 14-1 shows what you can reply to Notepad and what the resulting action is.

Table 14-1: Replies for Opening a File

Reply	Action
Yes	Saves the changes
No	Discards the changes
Cancel	Continues working in the current file

Opening a New File

To open a new, blank Notepad file, use the New command from the File menu.

Notepad opens a new file in the Notepad window.

Opening an Existing File

You should open only ASCII text files in the Notepad window. Text files generally have one of the following file extensions: .TXT, .BAT, or .INI. If you omit a file extension, Notepad appends the default file extension specified in the WIN.INI. To override the default, you must end the file name with a period (.). For example, to open the file C:TESTCHAR, you must type:

```
C:\TESTCHAR. [Return]
```

You can open an existing file from either the Notepad window or from the MS-DOS Executive window.

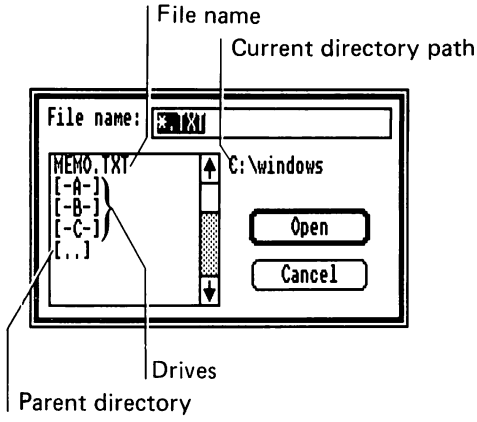
If you try to open a file that is not a text file, Notepad sends the message "Not a valid Notepad file" or a message stating the file does not contain text. However, if the file was created using MS-Paint, the nontextual file is displayed if Notepad receives a message from MS-Paint before another file is opened.

To open an existing file with the Notepad Open command:

1. Select the Open command from the File menu.

   Notepad displays the Open dialog box. Directories and drives are enclosed in brackets. Figure 14-6 shows the Open dialog box.

Figure 14–6: Open Dialog Box



2. From the list of file names, select the file name you want to open, or type a path name and a file name in the text box at the top of the dialog box.

   The file name can include wildcard characters.

   You can also double-click on the file name you want to open.

3. Select the Open command button.

   Notepad opens the specified file.

To open an existing file from the MS-DOS Executive window, double-click on the file name you want to open or select the file name and press the Return key.

MS-Windows starts Notepad and opens the file.

Creating a Time Log File

Notepad can create a time log file to keep track of how you spend your time during the day. To create a time log file, type .LOG as the first line in a Notepad file and save the file. You must type .LOG in capital letters. Notepad automatically appends the current date and time to the end of the file every time you open it.

To add the current date and time to a file you already have open, use the Time/Date command from the Edit menu or if you are using the keyboard, press the F5 key.

To create an accurate log of how you spend your time, edit the file to add text after each date and time.

Viewing Files in Other Directories

Initially, Notepad displays only text files (.TXT), as well as drives and directories. You can view files other than text files in other directories or drives.

To view files in other directories:

1. Select the Open command from the File menu.

   Notepad displays the Open dialog box.

2. In the text box, type the directory, drive, or file name you want to read.

   For example, you can type *.BAT to list all the files having the file extension .BAT.

   To move between directories, you can also double-click on the drive letter symbols, the directories, or the [..] symbol.

3. Select the Open command button.

   Notepad lists the specified files.

   The Open dialog box remains on the screen until you open a specific file or cancel the command.

Saving a File

When you create a new file or when you finish editing a file, you can save it and open it later. To save a Notepad file, you can use one of two commands from the File menu:

- Save As—Saves and names a new file
- Save—Saves a current file

Saving a New File

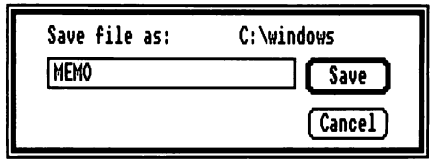
The Save As command names and saves a new file. It can also save the current file under a new file name and retain the original copy of the file on the disk under the old file name.

To save a new file:

1. Select the Save As command from the File menu.

   Notepad displays the Save As dialog box. Figure 14–7 shows the Save As dialog box.

Figure 14–7: Save As Dialog Box



2. Type a name for the file.

   If you do not type a file extension, Notepad automatically adds .TXT to the file name.

3. Select the Save command button.

   Notepad saves the file on the disk. The file remains on the screen so that you can continue editing it. Notepad displays the name of the file in the title bar of the Notepad window.

NOTE

If you type the name of a file that already exists, Notepad asks if you want to replace the existing file with the file you are saving. To replace the existing file, select the Yes command button. Otherwise, select the No command button and type a different file name.

Saving Changes

The Save command saves your changes to the current file on the disk. To save changes to the current file, use the Save command from the File menu. Notepad replaces the file on the disk with the current file.

Printing a File

The Print command prints your Notepad files. To print a file, use the Print command from the File menu.

Deleting a File

You can delete a Notepad file when you no longer want it or to make room for other files on your disk. To delete a file, use the Delete command from the File menu.

Chapter 15
Using Cardfile

MS-Windows Cardfile is a desktop application that organizes information such as names, addresses, phone numbers, and directions. Cardfile operates on a file of cards that are organized alphabetically. As you use Cardfile, the cards sort themselves automatically to remain alphabetized.

This chapter describes how to:

- Start Cardfile
- Create a card file
- Move through a card file
- Edit cards in a card file
- Work with card files

Starting Cardfile

To start Cardfile when it is neither in a window nor set aside as an icon in the icon area, use the Run command from the File menu in the MS-DOS Executive window. If the MS-DOS Executive is not a window, you must expand its icon into a window.

To start Cardfile:

1. Select the Run command from the File menu in the MS-DOS Executive window.

   The MS-DOS Executive window displays a dialog box.

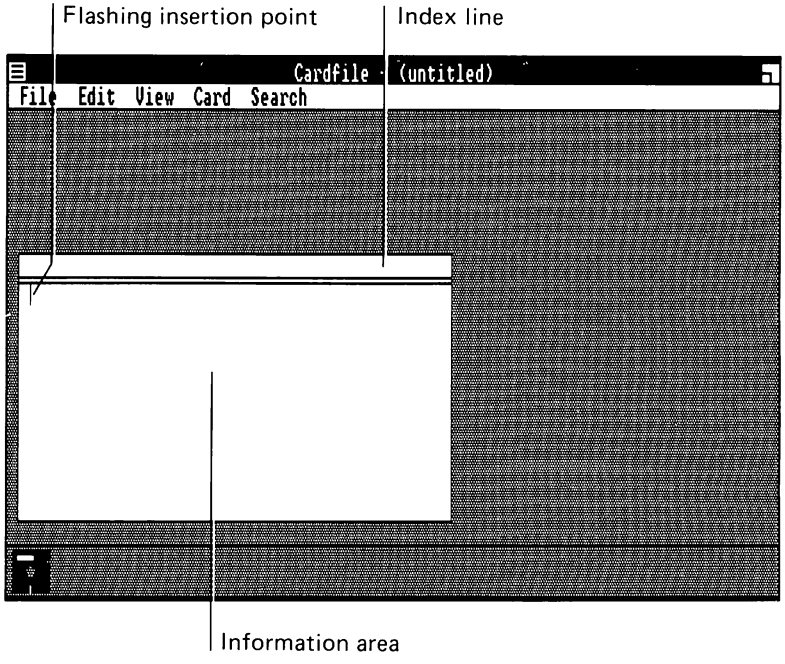
2. Type:

   ```
   CARDFILE
   ```

3. Select the Ok command button.

When you start Cardfile, it displays an untitled window in which you create cards and edit them. Figure 15–1 shows the Cardfile window.

Figure 15–1: Cardfile Window



Creating a Card File

Cardfile displays a new file as a single, blank card. This section describes:

- Index line
- Typing text
- Formatting text
- Adding new blank cards

Index Line

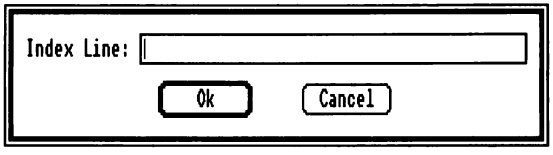
The index line is a bar at the top of each card. Cardfile uses the text you place in the index line to sort the cards alphabetically.

To place text in the index line:

1. Select the Index command from the Edit menu, or double-click on the card's index line.

   Cardfile displays the Index dialog box. Figure 15–2 shows the Index dialog box.

Figure 15–2: Index Dialog Box



2. Type text in the text box.
3. When you finish editing the text, select the Ok command button.

   The text becomes the index line.

Typing Text

After you create an index line, you can add text to a card; however, the Cardfile window must be active. When you have more than one card in your file, Cardfile places the text on the front card.

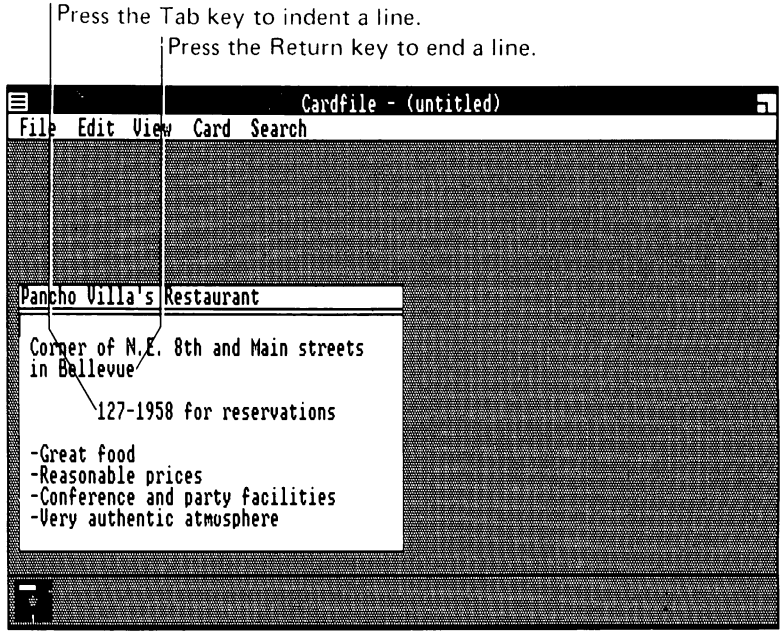
Cardfile enters text at the insertion point, which initially is displayed at the upper-left corner of the card. The insertion point moves to the right as you type.

Text is encoded in its ANSI representation. For more information about ANSI text representations, see Appendix G.

Formatting Text

Type the text as you want it to display. Figure 15–3 shows how to format text with the Return and Tab keys.

Figure 15–3: Formatting with the Return and Tab Keys



Adding a Card

You can add a new card to a file at any time. To add a new card:

1. Select the Add command from the Card menu.

   Cardfile displays the Add dialog box.

2. Type the text for the new card's index line.

3. Select the Ok command button.

   Cardfile adds the new card to your file in alphabetical order and scrolls the file to display the new card at the front.

Moving Through a File

Cardfile commands affect only the front card. To look at or act upon a card, you must move the card to the front of the file.

To move through the file, you can:

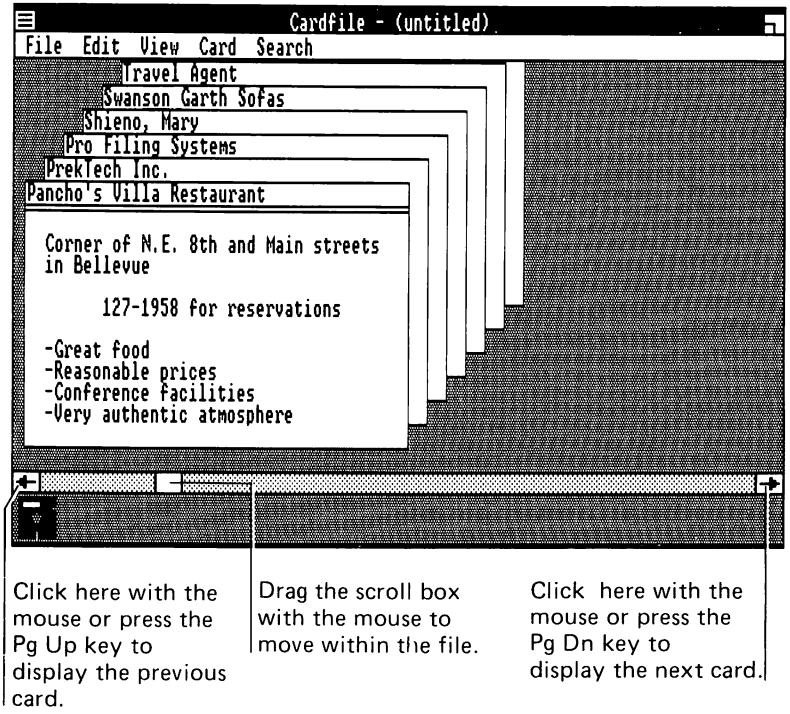
- Scroll
- Move a specific card directly to the front
- Search for a specific occurrence of text

Cardfile, however, always keeps the cards in alphabetical order.

Scrolling

The Cardfile window has a horizontal scroll bar at the bottom of the window. Figure 15-4 shows how to scroll through a file.

Figure 15–4: Scrolling Through a File



The scroll box in the horizontal scroll bar shows your relative position in the file. When the first card of the file is displayed in front, the scroll box is displayed at the far left of the scroll bar. When the last card is displayed at the front, the scroll box is displayed at the far right.

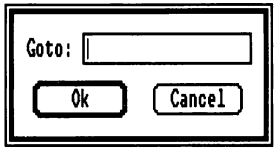
Moving a Card to the Front

To move a specific card to the front of a file:

1. Select the Goto command from the Search menu.

   Cardfile displays the Goto dialog box. Figure 15–5 shows the Goto dialog box.

Figure 15–5: Goto Dialog Box



2. In the text box, type the index line for the card you want to move to the front.

   You only have to type enough text to distinguish the card from the other cards.

3. Select the Ok command button.

   The card moves to the front of the file.

If you can see a card's index line, you can move the card to the front of the file by clicking on the index line.

To use the keyboard, press the Ctrl key to move a card to the front. When you press the Ctrl key and a letter on the keyboard, Cardfile scrolls to display the first card that has that letter as the first letter of its index line.

Changing the Index Line

To change the text in the index line:

1. Move the card you want to change to the front of the file.
2. Select the Index command from the Edit menu, or double-click on the card's index line.

   Cardfile displays the Index dialog box with the text from the current index line in the text box.

3. Type the new text.
4. Select the Ok command button.

   The new text becomes the card's index line.

Cardfile automatically replaces the card in the correct alphabetical order in the file, then scrolls the file to display the card at the front.

Editing Cards

You edit text in a card with commands from the Edit menu. You can change or delete text, or move or copy text to a new location.

You can also transfer text between Cardfile and other applications by using the Clipboard and the Cut, Copy, and Paste commands.

The following sections describe how to move the insertion point, select text, and edit cards.

Moving the Insertion Point

When you open a card file, an insertion point is displayed. When you work in another window, then return to the card file, the insertion point is displayed where you left it in the Cardfile window.

To move the insertion point, point where you want it and click the mouse button.

To use the keyboard, press the arrow keys. Pressing the up and down arrow keys moves the insertion point up or down one line. Pressing the right and left arrow keys moves the insertion point one character to the right or left.

Selecting Text

Before you use a command from the Edit menu, first select the text you want the command to affect. Figure 15–6 shows selected text.

To select text:

1. Point to the beginning of the text you want to select.
2. Drag to the end of the text you want to select.

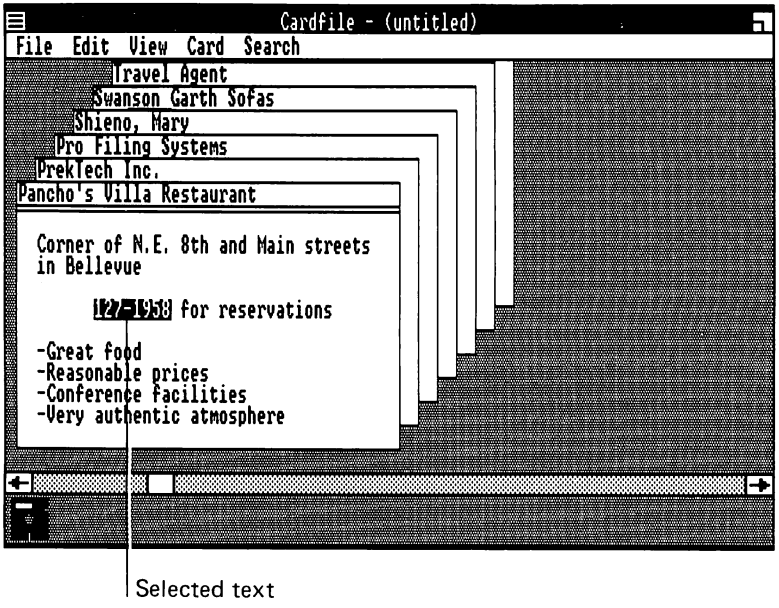
   Cardfile highlights the selected text.

To use the keyboard:

1. Press the arrow keys to move the insertion point to the beginning of the text you want to select.
2. While holding the Shift key, press the arrow keys to move the insertion point to the end of the text you want to select.

   Cardfile highlights the selected text.

Figure 15–6: Selected Text



Canceling an Edit

To cancel the most recent edit you made, use the Undo command from the Edit menu. You must use this command immediately after the edit.

Deleting Text

To delete text from a card:

1. Select the text you want to delete.
2. Select the Cut command from the Edit menu.

   To use the keyboard, press the Del key.

   Cardfile deletes the text.

The deleted text is placed in the Clipboard. Each time you place text in the Clipboard, however, the text replaces the previous information.

To replace deleted text, use the Paste command. To use the keyboard, press the Ins key.

Moving Text

You can move text from one place to another in a card by first deleting it, then pasting it into its new location. You can move text within the same card or to another card.

Moving Text Within the Same Card

To move text on the same card:

1. Select the text you want to move.
2. Select the Cut command from the Edit menu.

   To use the keyboard, press the Del key.
3. Move the insertion point where you want the text to be moved.
4. Select the Paste command from the Edit menu.

   To use the keyboard, press the Ins key.

   Cardfile moves the text to the insertion point.

Moving Text to Another Card

To move text to another card:

1. Select the text you want to move.
2. Select the Cut command from the Edit menu.

   To use the keyboard, press the Del key.
3. Move the card on which you want to place the text to the front.
4. Move the insertion point where you want to place the text.
5. Select the Paste command from the Edit menu.

   To use the keyboard, press the Ins key.

   Cardfile moves the text to the new card.

Copying Text

To copy text more than once in a file, copy the text to the Clipboard, then paste the text where and as often as you want it.

Copying Text to the Same Card

To copy text to the same card:

1. Select the text you want to copy.
2. Select the Copy command from the Edit menu.

   Cardfile copies the selected text to the Clipboard.
3. Move the insertion point where you want the copied text.
4. Select the Paste command from the Edit menu.

   To use the keyboard, press the Ins key.

   Cardfile copies the text at the insertion point.

Copying Text to Another Card

To copy text to another card:

1. Select the text you want to copy.
2. Select the Copy command from the Edit menu.
3. Move the card on which you want to place the text to the front.
4. Move the insertion point where you want to place the text.
5. Select the Paste command from the Edit menu.

   To use the keyboard, press the Ins key.

   Cardfile copies the text to the new card.

Finding Text

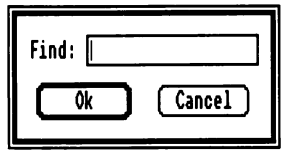
You can locate and change text in cards with the Find commands from the Search menu. When you select a Find command, you can begin searching for text at any place in the file. When locating text, Cardfile ignores capitalization.

To find text:

1. Move the card from which you want the search to begin to the front.
2. Move the insertion point where you want the search to begin.
3. Select the Find command from the Search menu.

Cardfile displays the Find dialog box. Figure 15–7 shows the Find dialog box.

Figure 15–7: Find Dialog Box



4. In the text box, type the text you want Cardfile to find.
5. Select the Ok command button to start searching.

   Cardfile searches from the insertion point to the end of the file and highlights the first occurrence of the specified text. Cardfile tells you if the text does not occur in the file.

After Cardfile has found the first occurrence of the specified text, you can find further occurrences by using the Find Next command from the Search menu.

If you use the Find Next command, Cardfile immediately searches for the last specified text. With the Find Next command, you can find and edit repeated occurrences of the text specified with the Find command.

Adding Information from Other Applications

Cardfile can transfer both text and artwork between a card and another application. For example, you can create a small map in MS-Paint, then transfer it to a card containing a friend's address. The amount of information you can transfer is limited by the size of the card.

To add information from other applications:

1. Place the information in the Clipboard.

   Usually, you select the Cut or Copy command from the Edit menu of the other application.

2. If you are transferring artwork, move to the Cardfile window and select the Picture command from the Edit menu.

   After you transfer a picture, you must use the Text command from the Edit menu to process text again.

3. On the card, move the insertion point where you want the information.
4. Select the Paste command from the Edit menu.

   To use the keyboard, press the Ins key.

   Cardfile moves the information to the insertion point.

Restoring a Card

You can restore a card to its original condition as long as it remains at the front of the file. Once you scroll, you cannot reverse any changes.

To restore a card, use the Restore command from the Edit menu.

Deleting a Card

You can delete a card from a file. However, you can only replace a deleted card by retyping the entire card.

To delete a card:

1. Move the card you want to delete to the front of the file.
2. Select the Delete command from the Card menu.

   Cardfile deletes the front card.

Copying a Card

To copy the information in a card to another card:

1. Move the card you want to copy to the front of the file.
2. Select the Duplicate command from the Card menu.

   Cardfile appends an exact copy of the front card to the front of the file.

Working With Card Files

With commands from the File menu, you can:

- Open a file
- View files in other directories
- Save a file
- Print a card or a file
- Merge files

You delete files with the File menu in the MS-DOS Executive window.

File Size

As you edit a file, Cardfile records its size. Cardfile shows the size of a file as the number of cards in the file.

To find out how many cards are in a file, use the About command from the System menu.

Opening a File

You can open a new or existing file in the Cardfile window. If you open a file when another is already open, Cardfile closes the current file. If you have changes that are not saved in the current file, Cardfile asks if you want to save them before it closes the file. Table 15-1 shows what you can reply to Cardfile and what the resulting action is.

Table 15–1: Replies for Opening a File

Reply	Action
Yes	Saves the changes
No	Discards the changes
Cancel	Continues working in the current file

Opening a New File

To create a new file from the Cardfile window, use the New command from the File menu.

Cardfile opens a new file in the Cardfile window. The name "untitled" is displayed in the title bar of the window.

Opening an Existing File

You can open an existing file from either the Cardfile window or from the MS-DOS Executive window.

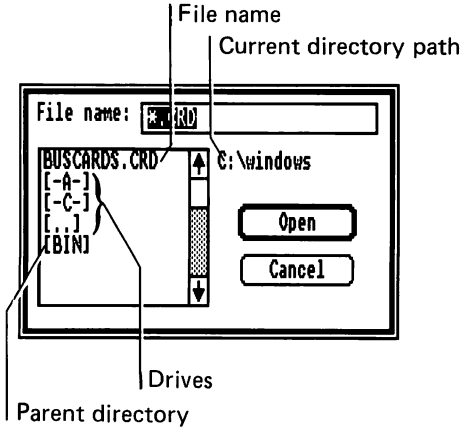
To open an existing file from the Cardfile window, use the Open command or double-click on the file name in the list box. Usually, these files have the file extension .CRD.

To open an existing file with the Open command:

1. Select the Open command from the File menu.

   Cardfile displays the Open dialog box. Directories and drives are enclosed in brackets. Figure 15–8 shows the Open dialog box.

Figure 15–8: Open Dialog Box



2. From the list of file names, select the file name you want to open, or type a path name and a file name in the text box at the top of the dialog box.

3. Select the Open command.

   Cardfile opens the specified file.

To open an existing file from the MS-DOS Executive window, double-click on the file name you want to open or select the file name and press the Return key. Generally, you can open files with the file extension .CRD.

Viewing Files in Other Directories

Initially, Cardfile displays only the names of the card files as well as drives and directories. You can view files, other than card files, in other directories or drives.

To view files in other directories or drives:

1. Select the Open command from the File menu.

   Cardfile displays the Open dialog box.

2. In the text box, type the directory, drive, or file name you want to read. For example, you can type *.TXT to read all the files having the file extension .TXT.

   To move between directories, you can also double-click on the drive letter symbols, the directories, or the [..] symbol.

3. Select the Open command.

   Cardfile lists the specified files.

The Open dialog box remains on the screen until you open a specific file or cancel the command.

Saving a File

When you create a new file, or when you finish editing a file, you can save it and open it later. To save a card file, you can use one of two commands:

- Save As—Saves and names a new file
- Save—Saves a current file

Saving a New File

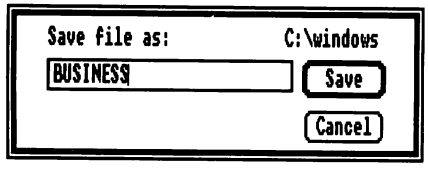
The Save As command names and saves a new file. It can also save the current file under a new file name and retain the original copy of the file on the disk under the old file name.

To save a new file:

1. Select the Save As command from the File menu.

   Cardfile displays the Save As dialog box. Figure 15-9 shows the Save As dialog box.

Figure 15-9: Save As Dialog Box



2. Type a name for the file.

   If you do not type a file extension, Cardfile automatically adds .CRD to the file name.

3. Select the Save command button.

   Cardfile saves the file on the disk. The file remains on the screen so that you can continue editing it. Cardfile displays the name of the file in the title bar of the Cardfile window.

   NOTE
   If you type the name of a file that already exists, Cardfile asks if you want to replace the existing file with the file you are saving. To replace the existing file, select the Yes command button. Otherwise, select the No command button and type a different file name.

Saving Changes

The Save command saves the changes to the current file on the disk.

To save changes to the current file, use the Save command from the File menu.

Cardfile replaces the file on the disk with the current file.

Printing in Cardfile

You can print a single card or an entire file (all the cards).

Printing a Card

To print a single card:

1. Move the card you want to the front of the file.
2. Select the Print command from the File menu.

   Cardfile prints the card on the default MS-Windows printer.

Printing an Entire File

To print an entire file (all the cards), select the Print All command from the File menu.

Cardfile prints the file on the default MS-Windows printer.

Deleting a File

You can delete a card file when you no longer want it or when you want to make room for other files on your disk. To delete a cardfile, use the Delete command from the File menu in the MS-DOS Executive window.

Merging Files

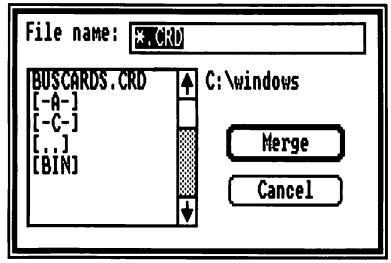
To consolidate your information, you can merge another file into the current file.

To merge two files:

1. Select the Merge command from the File menu.

   Cardfile displays the Merge dialog box. Figure 15-10 shows the Merge dialog box.

Figure 15–10: Merge Dialog Box



2. Select the file you want to merge with the current file.
3. Select the Merge command.

   Cardfile merges the cards from the other file with the cards in the current file and sorts all the cards alphabetically.

Viewing a File as a List

You can view a file as a list as well as a series of cards. When the cards are listed, Cardfile displays the index line of every card in the file. For example, you can create a phone directory by including a name and phone number in the index line of each card in a file, then display the file as a list.

To display the file as a list, use the List command from the View menu.

Automatic Dialing

Automatic dialing works through a DIGITAL PC50-MA or a Hayes-compatible modem. These may not be available in your country.

If you have a DIGITAL PC50-MA or a Hayes-compatible modem, Cardfile can dial a number for you.

To dial a number:

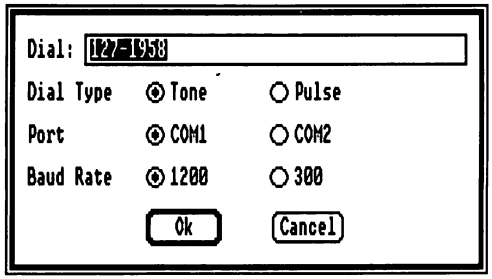
1. Select the entry you want.

   You can display a list of the cards in the file or move the card you want to the front in the Card view.

2. Select the Autodial command from the Card menu.

   Cardfile displays the Autodial dialog box. Figure 15–11 shows the Autodial dialog box.

Figure 15–11: Autodial Dialog Box



3. Change the dialog box options if necessary.

   Table 15-2 describes the dialog box options.

4. Select the Ok command button.

   Cardfile dials the number in the Dial text box.

Table 15–2: Autodial Options and Functions

Option	Function
Baud rate	Represents the speed of transmission for your telephone. The baud rate is determined by your modem and the communications line or network. For the correct setting, consult the owner's manual for your modem.
Dial	Searches for a phone number in the specified card, beginning with the index line, then places the first phone number found into the Dial text box. To locate a number other than the first number on the card, select the number before you select the Autodial command. To change the number in the Dial text box, retype or edit the number.
Dial Type	Selects the dial type of your phone. If you normally hear a tone for each number you dial, you have a tone telephone. If you hear a clicking sound, you probably have a pulse telephone. Generally, push button telephones have tone dialing; rotary dial telephones have pulse dialing.
Port	Selects the port to which your modem is connected.

Chapter 16
Using Calendar

MS-Windows Calendar is a desktop application that resembles a desktop calendar or an appointment book. Calendar gives you two views of time. In the Day view, you enter, display, or edit your appointments for each day. In the Month view, select the day for which you want to see appointments.

You can maintain more than one Calendar file; for example, you can view or edit more than one person's appointments. You can also set alarms to remind you of particular appointments.

This chapter describes how to:

- Start Calendar
- Edit the day view
- Set the alarm for your calendar
- View different times or days
- Customize your calendar
- Work with Calendar files

Starting Calendar

To start Calendar when it is neither in a window nor set aside as an icon in the icon area, use the Run command from the File menu in the MS-DOS Executive window. If the MS-DOS Executive is not a window, you must first expand its icon into a window.

To start Calendar:

1. Select the Run command from the File menu in the MS-DOS Executive window.

   The MS-DOS Executive window displays a dialog box.

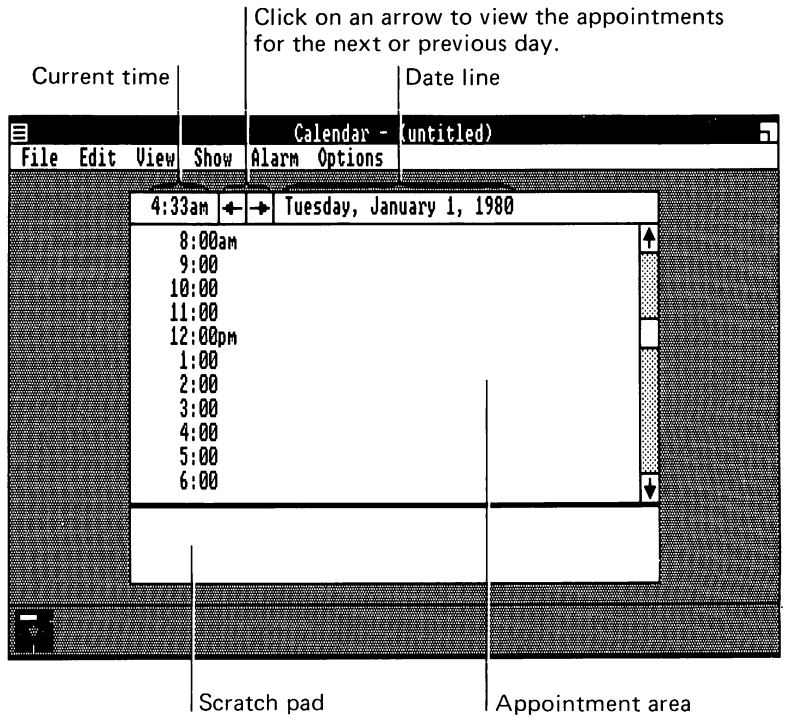
2. Type:

   ```
   CALENDAR
   ```

3. Select the Ok command button.

When you start Calendar, the daily appointment window (the Day view) is displayed for the current date. Calendar uses the date and time set when you started your workstation. Figure 16–1 shows the Day view that is displayed when you open the Calendar window.

Figure 16–1: Calendar Window: Day View



Editing the Day View

You enter appointments in the Day view. If you are in the Month view, use the Day command from the View menu.

Selecting a Time

The Day view initially lists times at one-hour intervals, beginning with 8 a.m. Before typing the description of an appointment, you must select the appointment time.

To select a time:

1. Point to the desired time.
2. Click on the mouse button.

   Calendar highlights the selected time.

To use the keyboard, press the down arrow key to move to the next hour. Press the up arrow key to move to the previous hour.

To schedule an appointment for a time not displayed on the screen, scroll the display before selecting the time. For details on scrolling, see "Viewing Different Times" in this chapter.

Entering an Appointment

To enter an appointment in the Day view:

1. Select the time of the appointment.
2. Type a description of the appointment.

   You are limited to 40 characters.

   For example, you can type:

   ```
   Lunch with Lydia
   ```

3. Press the Return key to select the time for the next appointment you want to enter.

Text is encoded in its ANSI representation. For more information about ANSI text representations, see the *Overview*.

Selecting Text

You can change any existing entry for an appointment. However, many editing features require that you first select the text of the entry.

To select text:

1. Point to the first character of the text to be selected.
2. Drag to the end of the text.

   Calendar highlights the selected text.

To use the keyboard:

1. Press the arrow keys to move the insertion point to the beginning of the text you want to select.
2. While holding the Shift key, press the arrow keys to move the insertion point to the end of the text you want to select.

   Calendar highlights the selected text.

Editing an Entry

You can edit an existing entry that is selected. To edit the text of an entry:

1. Select the text of an entry.
2. Type the new text.

   Calendar deletes the old entry when you type the first character of the new one.

Copying an Entry

To place the same entry more than once in a calendar, copy the text to the Clipboard, then paste the text where you want it in the calendar. You can copy text from either the appointment area or the scratch pad.

To copy text:

1. Select the text.
2. Select the Copy command from the Edit menu.

   Calendar copies the text to the Clipboard.

3. Move the insertion point where you want the copied text.

You can move it to a time in the appointment area or to the scratch pad.

4. Select the Paste command from the Edit menu.

   Calendar displays the text at the insertion point.

Deleting an Entry

You can delete text from either the appointment area or the scratch pad. You replace a deleted entry only by retyping it.

To delete an entry:

1. Select the text.
2. Select the Cut command from the Edit menu.

   Calendar copies the text to the Clipboard, then deletes it from Calendar.

Setting the Alarm

You can set the alarm for as many appointments in your calendar as you want. The alarm sounds at the time you specify.

Turning On the Alarm

To set the alarm:

1. Select the time at which you want an alarm to ring.
2. Select the Set command from the Alarm menu.

   Calendar sets the alarm.

The alarm clock symbol, a small bell, is displayed to the left of the selected time. When the alarm sounds, Calendar displays a dialog box reminding you of the appointment. If the Calendar window is inactive, the title bar at the top of the Calendar window flashes. If Calendar is an icon when the alarm sounds, the icon flashes.

Setting the Alarm for Sound

You can control whether the alarm makes a sound. Initially, the alarm is set for sound; it rings unless you set it to be silent.

To turn off the sound or to reset the sound for an alarm:

1. Select the Controls command from the Alarm menu.
2. Select the Sound option.
3. Select the Ok command button.

   If the alarm is set for sound, Calendar sets it for silence. If you select the Sound option again, Calendar resets the sound.

Setting the Alarm to Ring Early

To set the alarm to ring early:

1. Select the Controls command from the Alarm menu.
2. Select the Early Ring text box.
3. Type a number between 0 and 10. This number represents the number of minutes before your appointment that the alarm rings.
4. Select the Ok command button.

   Calendar sets the alarm.

Turning Off the Alarm

When the Calendar box is active, Calendar displays the Alarm Dialog box. If the Calendar window is inactive, the title bar flashes. If Calendar is an icon, the icon flashes.

You can turn off an alarm, letting the time remain set. You can turn on the alarm again later.

To turn off the alarm:

- If the Calendar window is active, select the Ok command button in the Alarm dialog box.
- If the window is inactive, or if Calendar is an icon, select the window or icon.

  After Calendar displays the Alarm dialog box, select the Ok command button.

To use the keyboard:

- If the Calendar window is active, press the Return key.
- If the window is inactive, or if Calendar is an icon, press Alt/Tab until Calendar is selected.

  After Calendar displays the Alarm dialog box, press the Return key.

Removing an Alarm

To remove an alarm:

1. Select the time the alarm is set for.
2. Select the Set command from the Alarm menu.

   Calendar cancels the alarm you previously set.

Viewing Different Times or Dates

You can move through Calendar to display the appointments you have entered or to select a day other than the one currently displayed in the Day view.

Viewing Different Times

The Day view displays only a few of the day's appointments. Therefore, to see a particular appointment, scroll through the Day view. Table 16-1 describes how to scroll to view different times with the mouse and keyboard.

Table 16–1: Scrolling to View Different Times

To view...	With the Mouse...	With the Keyboard...
Different appointments	Click on the arrows at the end of the scroll bar	Press the up and down arrow keys
	The list of appointments scroll in the direction the arrow points.	When you reach the last visible appointment, press the up or down arrow key to scroll the window to the next or previous appointment.
The next screen	Click below the scroll box	Press the Pg Dn key
The previous screen	Click above the scroll box	Press the Pg Up key

Viewing Different Dates

To change the date or month that is displayed, use the commands from the Show menu. These commands apply to dates when in the Day view, and to months when in the Month view. Table 16-2 describes how to scroll to view different dates.

Table 16–2: Scrolling to View Different Dates

To display...	With the Mouse...	With the Keyboard...
Current date or month	Select the Today command from the Show menu	Press the Home key
Previous date or month	Select the Previous command from the Show menu	Press Ctrl/Pg Up
Next date or month	Select the Next command from the show menu	Press Ctrl/Pg Dn

Viewing Different Dates Using the Month View

In the Month view, select the day for which you want to enter, edit, or display appointments.

To display the Month view, use the Month command from the View menu or click on the date line.

Table 16-3 describes how to move in the Month view and select with the mouse a day you want to view.

Table 16–3: Moving in Month View with the Mouse

To select...	Click on...
Another day	Desired day
Next month	Scroll arrow at the bottom of the vertical scroll bar
Previous month	Scroll arrow at the top of the vertical scroll bar
Next year	Gray area below the scroll box
Previous year	Gray area above the scroll box

Table 16-4 describes how to move in the Month view and select with the keyboard a day you want to view.

Table 16–4: Moving in Month View with the Keyboard

To Select...	Press...
Next date	Right arrow key
Previous date	Left arrow key
Date directly below the current date	Down arrow key If the current date is in the bottom row of the calendar, pressing the down arrow key selects the next month.
Date directly above the current date	Up arrow key If the current date is in the top row of the calendar, pressing the up arrow key selects the previous month.
Next month	Pg Dn key
Previous month	Pg Up key

Once you select the day you want, you return to the Day view by double-clicking on the selected day, pressing the Return key, or using the Day command from the View Menu.

Viewing a Specific Date

To display a specific date:

1. Select the Date command from the Show menu.
2. In the text box, type the date you want Calendar to display.
3. Select the Ok command button.

   Calendar displays the date.

You can type any date between January 1, 1980 and December 31, 2099. Type dates in the following format: mm/dd/yyyy or mm-dd-yyyy. You do not need to type leading zeros for days or months.

> **NOTE**
> You can specify the date format that is prevalent in your country through the Control Panel.

If you type a two-digit number for the year, Calendar assumes the 20ieth century. Table 16-5 shows acceptable entries.

Table 16–5: Acceptable Entries for Dates

Date	Typed Representation
January 19, 1985	1/19/85
November 7, 1985	11-7-85
January 1, 2010	1/1/2010

Customizing Your Calendar

You can customize the Day view of your calendar with commands from the Options menu. For example, you can change the day settings or add notes to your appointments.

Changing Day Settings

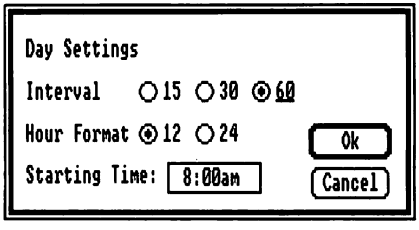
The day settings control the display of the Day view.

To change the day settings:

1. Select the Day Settings command from the Options menu.

   Calendar displays the Day Settings dialog box. Figure 16–2 shows the Day Settings dialog box.

Figure 16–2: Day Settings Dialog Box



2. Select the options you want: Interval, Hour Format, or Starting Time.

Interval controls the interval for daily appointments. You can select 15-minute, 30-minute, or 60-minute intervals.

Hour Format represents the Calendar clock: a standard 12-hour clock or a 24-hour clock.

Starting Time is the earliest displayed time when the Day view is displayed.

3. Select the Ok command button.

   Calendar changes the day setting to the option you specified.

Using Special Times

You can enter appointments for special times. A special time is any time that falls between the intervals set with the Day Settings command on the Options menu. For example, 11:10 is a special time.

Adding Special Times

To add a special time:

1. Select the Special Time command from the Options menu.

   Calendar displays the Special Time dialog box.

2. Type the desired time in the text box.
3. Select the Insert command.

   Calendar adds the new time.

Deleting Special Times

To delete a special time:

1. Select the time you want to delete.
2. Select the Special Time command from the Options menu.

   Calendar displays the Special Time dialog box with the selected time in the text box.

3. Select the Delete command.

   Calendar deletes the selected time.

Adding Notes

The daily appointment window has a scratch pad, located at the bottom of the Calendar window, to which you can add notes.

To add notes:

1. Move the insertion point to the scratch pad area and click.

   To use the keyboard, press the Tab key.

   Calendar displays an insertion point.

2. Type your notes.

3. To return to the appointment area, move the insertion point. To use the keyboard, press the Tab key to move the insertion point.

   Calendar displays the notes in the scratch pad.

Marking Dates

You can mark dates in the Month view. For example, you can mark dates of special occasions.

Marking a Date

To mark a date in the Month view:

1. Point to the date you want to mark and click, or press the arrow keys to move to the date.

2. Select the Mark command from the Options menu.

   Calendar puts a small box around the number.

Unmarking a Date

When a marked date is highlighted, the Mark command from the Options menu has a check mark next to it.

To unmark a marked date:

1. Select the date you want to unmark.

2. Select the Mark command from the Options menu.

   Calendar removes the box around the number.

Working With Calendar Files

With commands from the File menu in the Calendar window, you can:

- Open a file
- View files in other directories
- Save a file
- Print a file
- Remove appointment dates

You delete Calendar files with commands from the File menu in the MS-DOS Executive window.

Opening a File

You can have many different Calendar files. For example, you can have two files to record two different people's appointments.

Opening a New File

To create a new calendar file, use the New command from the File menu.

Opening an Existing File

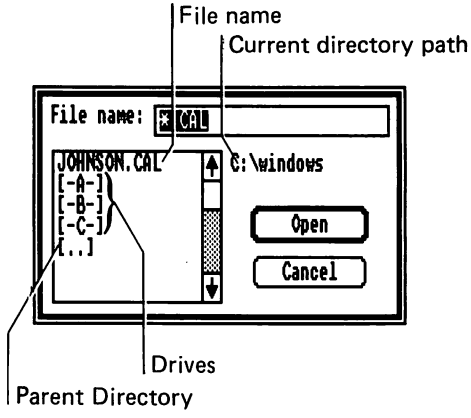
You can open an existing file from either the Calendar window or from the MS-DOS Executive window.

To open an existing file with the Open command:

1. Select the Open command from the File menu.

   Calendar displays the Open dialog box. Directories and drives are enclosed in brackets. Figure 16-3 shows the Open dialog box.

Figure 16–3: Open Dialog Box



2. From the list of file names, select the file name you want to open, or type a path name and a file name in the text box at the top of the dialog box.

   You can also double-click on the file name you want to open.

3. Select the Open command button.

   Calendar opens the specified file.

To open an existing file from the MS-DOS Executive window, double-click on the file name you want to open or select the file name and press the Return key. Usually, these files have the file extension .CAL.

MS-Windows starts Calendar and opens the file you selected in the MS-DOS Executive window.

Viewing Files in Other Directories

Initially, Calendar displays only the names of the calendar files as well as drives and directories. You can view files, other than calendar files, in other directories or drives.

To view files in other directories:

1. Select the Open command from the File menu.

   Calendar displays the Open dialog box.

2. In the text box, type the directory, drive, or file name you want to read. For example, you can type *.CAL to list all the files having the file extension .CAL.

   To move between directories, you can also double-click on the drive letter symbols, the directories, or the [..] symbol.

3. Select the Open command.

   Calendar lists the specified files. The Open dialog box remains on the screen until you open a specific file or cancel the command.

Saving a File

When you create a new file, or when you finish editing a file, you can save it and open it later. To save a calendar file, use one of two commands from the File menu:

- Save As—Saves and names a new file
- Save—Saves a current file

When using Calendar, keep the size of the .CAL file smaller than 32K bytes. Use the Remove option to remove past months. You may have to restart your workstation if you try to save a calendar file that is larger than 32K bytes.

Saving a New File

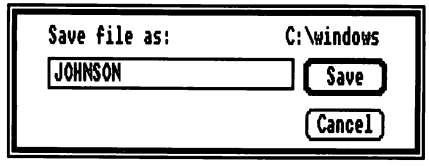
The Save As command names and saves a new file. You can also save the current file under a new file name and retain the original copy of the file on the disk under the old file name.

To save a new file:

1. Select the Save As command from the File menu.

   Calendar displays the Save As dialog box. Figure 16–4 shows the Save As dialog box.

Figure 16–4: Save As Dialog Box



2. Type a file name for the file. If you do not type an file extension, Calendar adds .CAL to the file name.
3. Select the Save command button.

   Calendar saves the file on the disk. The file remains on the screen so that you can continue editing it. Calendar displays the name of the file in the title bar of the Calendar window.

   NOTE
   If you type the name of a file that already exists, Calendar asks if you want to replace the existing file with the file you are saving. To replace the existing file, select the Yes command button. Otherwise, select the No command button and type a different file name.

Saving Changes

To save changes to the current file, use the Save command from the File menu.

Calendar replaces the file on the disk with the current file.

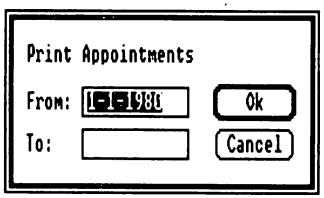
Printing Appointments

To print appointments:

1. Select the Print command from the File menu.

   Calendar displays the Print dialog box. Figure 16–5 shows the Print dialog box.

Figure 16–5: Print Dialog Box



2. In the From text box, type the first date you want to print.
3. Press the Tab key to move the cursor to the To text box.
4. Type the last date you want to print.

   To print a single date's appointments, leave the To text box blank.

5. Select the Ok command button.

   Calendar prints the text for the selected dates.

Removing Appointment Dates

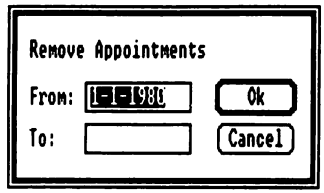
You can delete a single date or a range of dates to make room for other dates on your disk.

To remove appointment dates:

1. Select the Remove command from the File menu.

   Calendar displays the Remove dialog box. Figure 16–6 shows the Remove dialog box.

Figure 16-6: Remove Dialog Box



2. In the From text box, type the first date you want to remove.
3. In the To text box, type the last date you want to remove.

   To remove a single date's appointments, leave the To text box blank.
4. Select the Ok command button.

   Calendar removes the text for the dates you selected.

Deleting a File

You can delete a file to make room for other files on your disk. To delete a file, use the Delete command from the File menu in the MS-DOS Executive window.

Chapter 17
Using Calculator

The MS-Windows Calculator is a desktop application that works as a hand-held calculator. It has many basic arithmetic functions and a memory.

This chapter describes how to:

- Start Calculator
- Use Calculator

Starting Calculator

To start Calculator when it is neither in a window nor set aside as an icon in the icon area, use the Run command from the File menu in the MS-DOS Executive window. If the MS-DOS Executive is not a window, you must first expand its icon into a window.

To start Calculator:

1. Select the Run command from the File menu in the MS-DOS Executive window.

   The MS-DOS Executive window displays a dialog box.

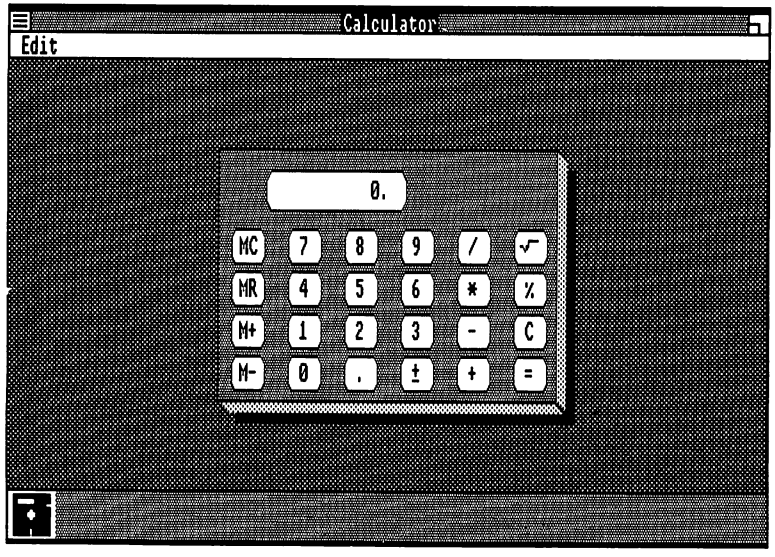
2. Type:

   CALC

3. Select the Ok command button.

When you start Calculator, it creates a window with a calculator in it. Figure 17–1 shows the Calculator window.

Figure 17–1: Calculator Window



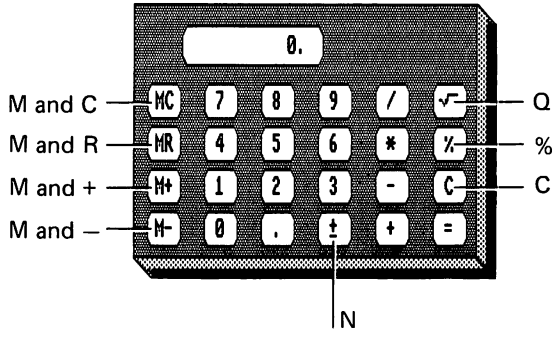
Using Calculator

Calculator performs standard calculations. It also has access to the Clipboard.

To use Calculator, point to the keys in the Calculator window and click.

To use the keyboard, use the keys shown in Figure 17–2. You can type the digits 0 through 9 and the plus, minus, multiplication, division, and equal signs on the keyboard or on the numeric keypad. If you use the numeric keypad, the Num Lock key must be enabled.

Figure 17–2: Using Calculator with the Keyboard



Using the Memory

Calculator has its own memory, which initially is set to zero. You can add to or subtract from this value. You can also display or clear the memory. Table 17-1 shows the mouse and keyboard procedures for using memory.

Table 17–1: Using Memory with the Mouse and Keyboard

To...	With the Mouse...	With the Keyboard...
Clear the memory	Click on MC	Press M/C
Display the value in memory	Click on MR	Press M/R
Add the displayed value to memory	Click on M+	Press M/+
Subtract the displayed value from memory	Click on M-	Press M/-

Using the Clipboard

You can use the Clipboard to copy numbers from other applications into the Calculator display, and from the Calculator display into other applications.

Copying to the Clipboard

To copy the displayed value to the Clipboard, use the Copy command from the Edit menu.

Calculator copies the displayed value to the Clipboard.

Copying from the Clipboard

To add data from the Clipboard to the displayed Calculator value, use the Paste command from the Edit menu.

To use the keyboard, press the Ins key.

Calculator adds the data from the Clipboard to the displayed Calculator value. If the Clipboard does not contain a number, Calculator does nothing. If the Clipboard contains a formula, that is, a legitimate series of calculatory entries such as 2X3-4, Calculator pastes the result of the formula.

Chapter 18
Using Clock

The MS-Windows Clock is a desktop application that acts as a standard clock and shows the current time.

This chapter describes how to:

- Start Clock
- Set Clock

Starting Clock

To start Clock when it is neither in a window nor set aside as an icon in the icon area, use the Run command from the File menu in the MS-DOS Executive window. If MS-DOS Executive is not a window, you must first expand its icon into a window.

To start Clock:

1. Select the Run command from the File menu in the MS-DOS Executive window.

   The MS-DOS Executive window displays a dialog box.

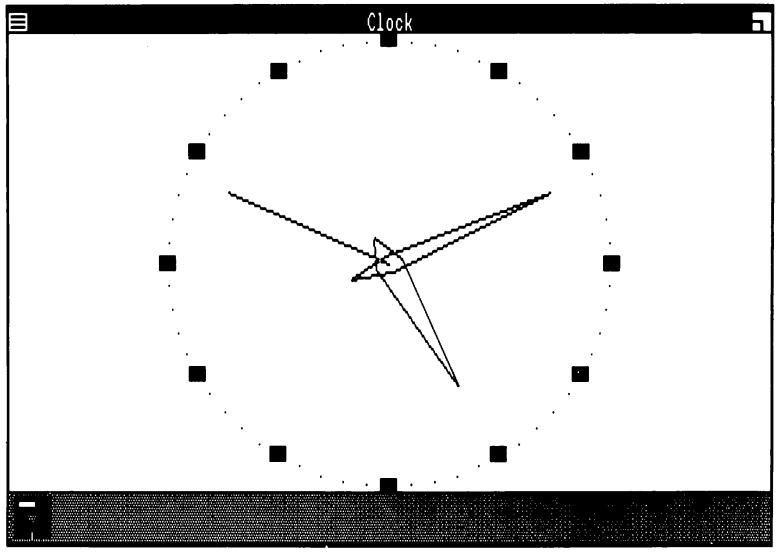
2. Type:

   ```
   CLOCK
   ```

3. Select the Ok command button.

When you start Clock, it displays a window that contains a clock. Figure 18–1 shows the Clock window.

Figure 18–1: Clock Window



Setting the Clock

Clock displays the time from your hardware clock or the time you entered when you started your workstation. You can reset the Clock from the Control Panel.

Clock continues to show the correct time even if you shrink it into an icon. When Clock is an icon, you can display the current time without using any of the screen's workspace.

Chapter 19
Using Reversi

MS-Windows Reversi is a desktop application that is a game you play with your workstation. To win Reversi, you try to finish the game with more squares of your color on the board than the workstation has of its color.

This chapter describes how to:

- Start Reversi
- Follow the rules of Reversi
- Play Reversi
- Use Reversi's hints
- Start a new game of Reversi

Starting Reversi

To start Reversi when it is neither in a window nor set aside as an icon in the icon area, use the Run command from the File menu in the MS-DOS Executive window. If the MS-DOS Executive is not a window, you must first expand its icon into a window.

To start Reversi:

1. Select the Run command from the File menu in the MS-DOS Executive window.

   The MS-DOS Executive window displays a dialog box.

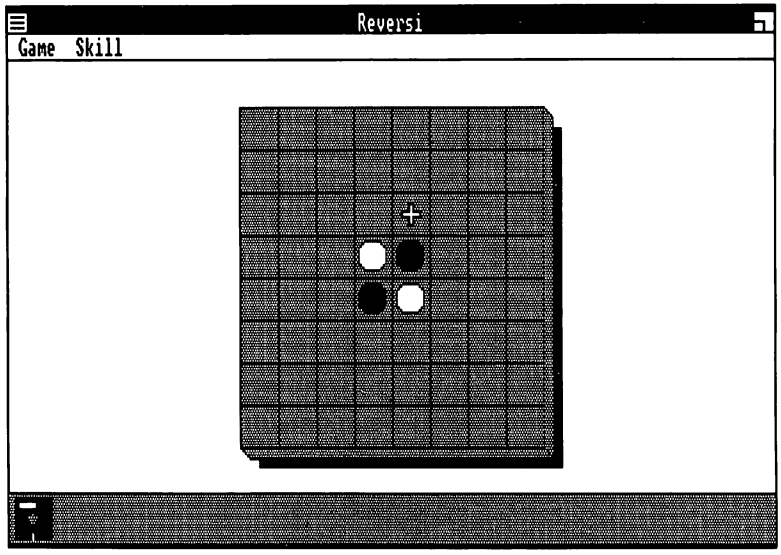
2. Type:

```
REVERSI
```

3. Select the Ok command button.

When you start Reversi, it displays a window that contains the Reversi game. Figure 19–1 shows the Reversi window.

Figure 19–1: Reversi Window



With a black and white screen, your squares are white; the workstation's squares are black. The following sections describe how to play Reversi using the black and white screen.

Rules of the Game

The rules of Reversi are:

- You try to turn black squares white by trapping them between two white squares. To trap a black square, the three squares must form a straight line: horizontal, vertical, or diagonal.
- If you can trap a black square, you must do so.
- If you cannot move, select the Pass command from the Game menu.
- When neither you nor the workstation can move, the game is over.

  The one with the most squares wins.

Playing Reversi

To play Reversi:

1. Select one of the four skill levels from the Skill menu.

   Skill levels range from Beginner, the easiest, to Master, the hardest. The higher the skill level, the longer your workstation spends calculating its moves.

2. Point or press the arrow keys to move to a gray square.

   The mouse cursor displays as a cross when you can make a move.

3. Click on the mouse button or press the spacebar to make your move.

4. Wait for the workstation to make its move.

   The mouse cursor may change to an hourglass while the workstation calculates its move.

Reversi Hints

You can ask Reversi for hints. When you use the Hint command from the Game menu, Reversi shows you where it would move if it had your turn. You can accept the hint or move somewhere else.

Starting a New Game

You can start a new game at any time, even in the middle of the current game.

To start a new game, use the New command from the Game menu.

Chapter 20
Introducing MS-Paint

This chapter describes:

- MS-Paint
- Preliminary information
- Paint definitions

Defining MS-Paint

MS-Paint is a drawing tool designed for use with MS-Windows. With MS-Paint, you can create, enhance, save, and print artwork.

MS-Paint helps you create art that best suits your needs. Whether you create flow charts or freehand illustrations, you can find all the tools you need on MS-Paint's tools and shapes palette. Special commands such as Zoom In, Copy, and Invert let you enhance your work. You can transfer text and graphics from other programs to MS-Paint for alteration and enhancement, or create MS-Paint graphics to use in other applications such as Cardfile.

You do not need to memorize complex commands or instructions. With MS-Paint, you can create art quickly. Although MS-Paint is designed for use with a mouse, you can use it with the keyboard. For more information on using the keyboard, see Appendix G.

Preliminaries

Before using MS-Paint, you should become familiar with your workstation, its operating system, and MS-Windows.

Definitions

The following definitions are helpful for learning MS-Paint:

- The *canvas* is the area available for a drawing. It matches the maximum printable surface area of your printer or display device. Figure 20–1 shows an MS-Paint canvas for a printer in portrait mode.

Figure 20–1: MS-Paint Canvas

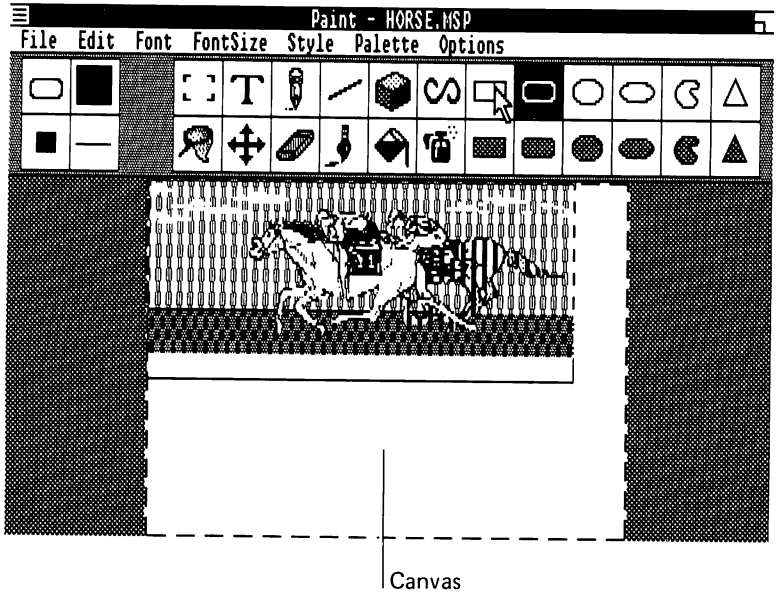
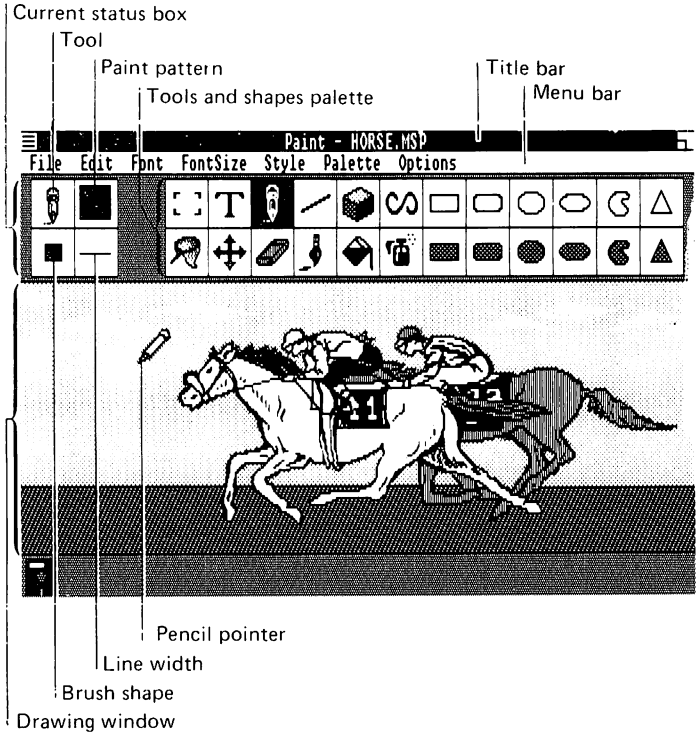


Figure 20–2 shows an MS-Paint canvas that is displayed on your screen. This canvas is called the MS-Paint window.

Figure 20–2: MS-Paint Window



- The *drawing window* frames the portion of a canvas that is displayed on the screen.
- The *title bar* contains the title of your canvas.
- The *menu bar* contains the names of MS-Paint's command menus.
- The *tools and shapes palette* contains the implements for drawing and refining your artwork.
- The *current status box* shows the tool, paint pattern, brush shape, and line width that MS-Paint uses when you draw.
- The mouse cursor selects menus, commands, tools, and shapes. The mouse cursor changes shape in the drawing area when you select a different tool or a shape.

Chapter 21
MS-Paint Tools and Shapes Summary

This chapter describes:

- The functions of MS-Paint's tools
- The functions of MS-Paint's shapes

This chapter shows the icons for the tools and shapes that are located in the tools and shapes palette. You use these icons to follow the procedures in Chapter 22 and Chapter 23.

Tools

Selection Rectangle

Defines a rectangular area for editing.

Selection Net

Defines a nonrectangular area for editing.

Text

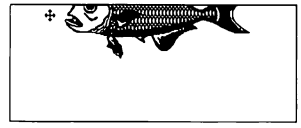
Enters text in the selected font, size, and style.

Fill

Fills an enclosed area with the current pattern.

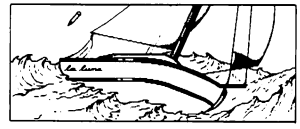
Scroll

Slides the canvas under the drawing window.



Pencil

Draws a thin line.



Eraser

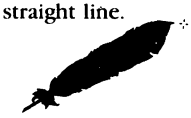
Erases the features of a drawing along the pointer path.

Curve

Creates a curved line.

Line

Draws a straight line.

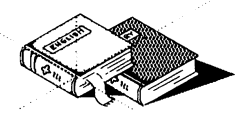


Brush

Paints in the current pattern.

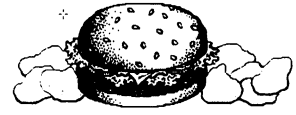
3-D

Displays axes to follow when creating 3-D drawings.



Airbrush

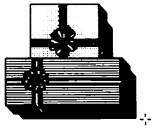
Sprays paint in the current pattern.



Shapes

Box

Draws a box with square corners.

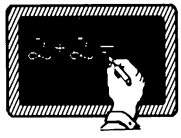


Oval

Draws an oval.

Rounded Box

Draws a box with rounded corners.



Freehand Polygon

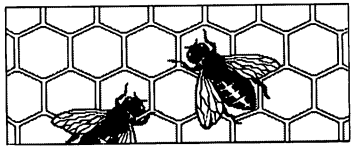
Draws shapes that are closed with a straight line upon release of the mouse button.

Circle

Draws a circle.

Polygon

Draws a polygon.



Chapter 22
Getting Started With MS-Paint

This chapter contains the information you need to:

- Start MS-Paint
- Draw with MS-Paint
- Save a canvas
- Use MS-Paint's palettes
- Print a canvas
- Finish MS-Paint

Starting MS-Paint

To start MS-Paint when it is neither in a window nor set aside as an icon in the icon area, use the Run command from the File menu in the MS-DOS Executive window. If the MS-DOS Executive is not a window, you must first expand its icon into a window.

To start MS-Paint:

1. Select the Run command from the File menu in the MS-DOS Executive window.

   The MS-DOS Executive window displays a dialog box.

2. Type:

   ```
   PAINT
   ```

3. Select the Ok command button.

   MS-Paint creates an untitled canvas and opens the drawing window over it.

Before you begin drawing, if you intend to print your canvas, select the For Printer command from the Options menu. You must also be connected to your printer before you can print a drawing. If this command is not selected, you will not be able to print any of your screens. The canvas is intended for the printer that is the default when you create the canvas.

Select the For Screen command from the Options menu if you have no printer, no printer is selected, you only want to display the drawing, or you want to transfer the canvas to other MS-Windows applications.

Once you select a For Printer or For Screen command, you cannot change the setting unless you use the New command from the File menu.

Drawing

You draw by selecting the drawing tools from the tools and shapes palette. The default tool, the Pencil, draws thin lines for sketches. The Brush paints an area with the current brush pattern. You erase segments of your drawing with the Eraser. Double-clicking on the Eraser, clears the whole canvas.

Drawing with the Pencil

To use the Pencil:

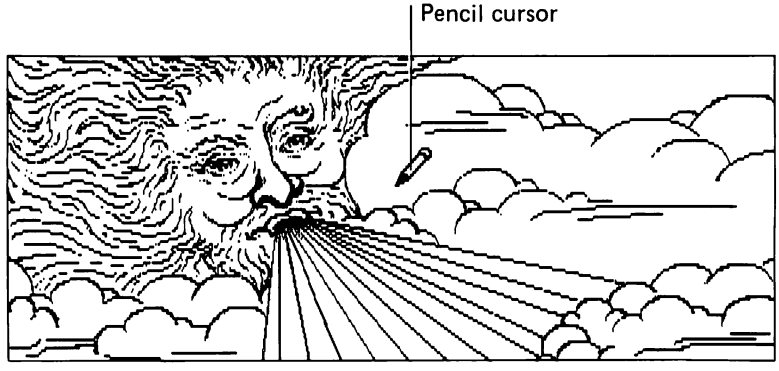
1. Select the Pencil from the tools and shapes palette if it is not the current tool.

   The Pencil is displayed in the current tool status box.

2. Drag the Pencil within the drawing window to sketch.

Figure 22-1 shows an example of the Pencil drawing Old Man Winter.

Figure 22-1: Drawing with the Pencil



Drawing with the Brush

To draw with the Brush:

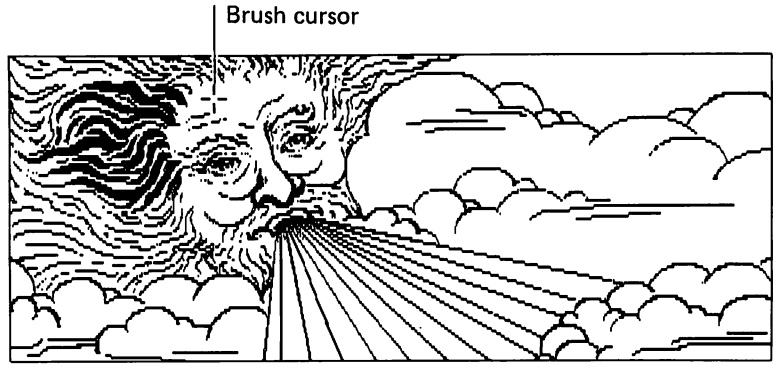
1. Select the Brush from the tools and shapes palette.

   The Brush is displayed in the current tool status box.

2. Drag the mouse cursor within the drawing window to draw.

Figure 22-2 shows an example of the Brush giving Old Man Winter dark hair.

Figure 22-2: Drawing with the Brush



Using the Eraser

You erase mistakes and parts of the drawing that you no longer want with the Eraser.

To use the Eraser:

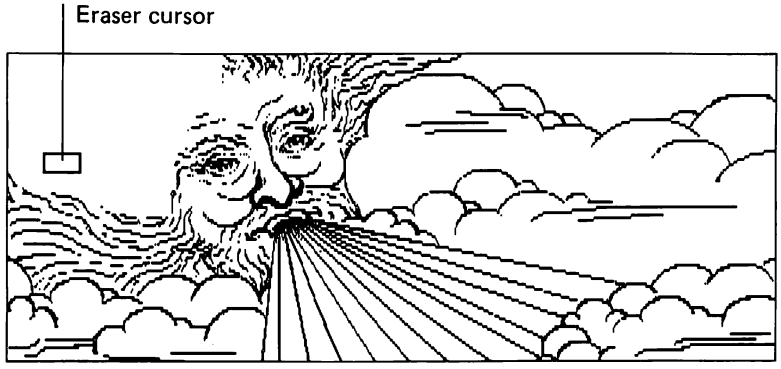
1. Select the Eraser from the tools and shapes palette.

   The Eraser is displayed in the current status box.

2. Drag the mouse cursor within the drawing window to erase.

Figure 22–3 shows the Eraser erasing some of Old Man Winter's hair.

Figure 22–3: Using the Eraser



Saving a Canvas

The Save As command saves the contents of your canvas.

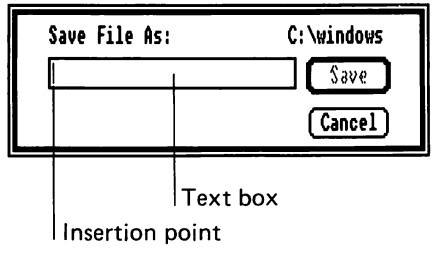
To save your canvas:

1. Select the Save As command from the File menu.

   A dialog box prompts you to name your canvas. The text box is empty when your canvas is untitled.

   Figure 22–4 shows the Save As dialog box.

Figure 22–4: Save As Dialog Box



2. Type a name for your canvas. MS-Paint adds the file extension .MSP if you don't provide one.

3. Select the Save command button.

   MS-Paint writes the contents of your canvas to your disk.

Once you have created MS-Paint files that have the file extension .MSP, you can start MS-Paint by double-clicking on the file name in the MS-DOS Executive window. This loads both MS-Paint and the file.

Using MS-Paint's Palettes

To specify patterns, line widths, and brush shapes in MS-Paint, select options from the Palette menu.

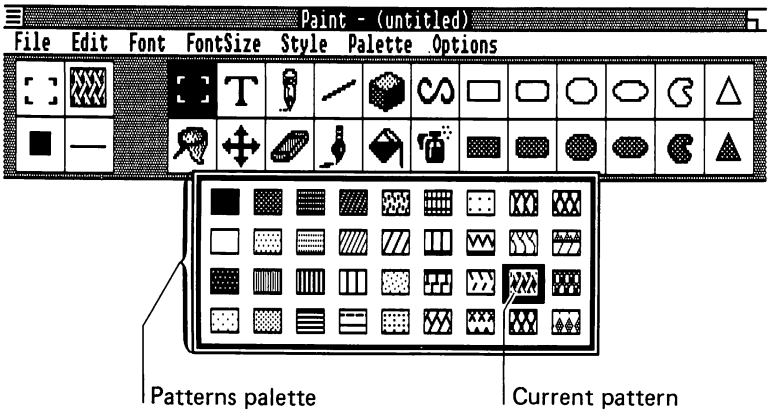
For example, to change the current MS-Paint pattern:

1. Select the Patterns command from the Palette menu.

   The pattern palette is displayed in the drawing window and highlights the current pattern.

   Figure 22–5 shows the patterns palette.

Figure 22–5: Patterns Palette



2. Select the pattern you want.

   The pattern palette vanishes, and the new pattern is displayed in the current pattern status box.

Once a palette is displayed on the screen, you must make a selection before you can return to your canvas. If you decide not to change the selection, select the item currently highlighted.

Printing a Canvas

To print an MS-Paint canvas:

- Your printer must be connected and turned on.
- The For Printer command from the Options menu must be selected when you start MS-Paint, indicating that the printer is connected.

To print your canvas, select the Print command from the File menu. MS-Paint prints the canvas on the printer.

Finishing MS-Paint

The System menu's Close command finishes an MS-Paint session and closes the drawing window.

To finish an MS-Paint session:

1. Select the Close command from the System menu.

   If your canvas has changed, MS-Paint displays a dialog box.

2. Specify whether you want to save the changes before quitting.

When MS-Paint quits, you are returned to the applications directory in MS-Windows.

Chapter 23
Creating a Drawing

This chapter describes how to:

- Add shapes, text, and patterns to your canvas
- Use MS-Paint's selection tools
- Use several of MS-Paint's editing commands

Drawing a Box

To draw a box:

1. Select the Box tool from the tools and shapes palette.

   The Box is displayed in the current status box.

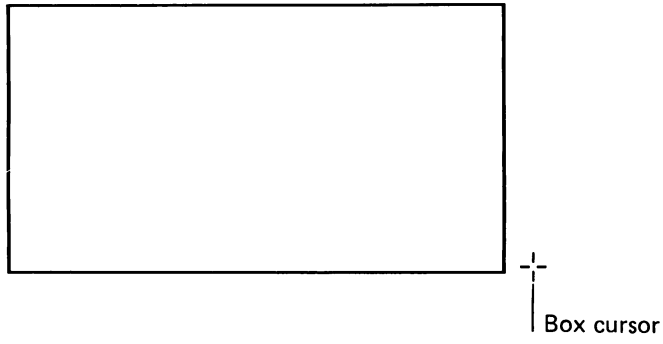
2. Point to the drawing window.

   The mouse cursor is displayed as a cross.

3. Hold down the mouse button to mark a corner, then drag the cross diagonally to create the box.

Figure 23–1 shows a box with the Box mouse cursor.

Figure 23–1: Box



Drawing Other Shapes

Table 23-1 describes how to use the tools that draw other shapes.

Table 23–1: Tools for Drawing Shapes and How to Use Them

Tool	Procedure
Line	Drag to draw straight line segments.
3-D	Drag along the axes that create shapes with a three-dimensional appearance.
Curve	Draw a line segment, then click to the side of it. MS-Paint turns the segment into a curve.
Airbrush	Drag to spray paint in the current pattern.
Rounded Box, Circle, Oval	Drag to draw the shape.
Freehand Polygon	Drag to draw. MS-Paint closes the image with a straight line when you release the mouse button.
Polygon	Click to mark the corners of the image. MS-Paint draws the lines. Double-click on the final corner.

Adding Text

The Text tool adds text to a drawing. The text's display is determined by the selected commands from the Font and FontSize menus.

To add text:

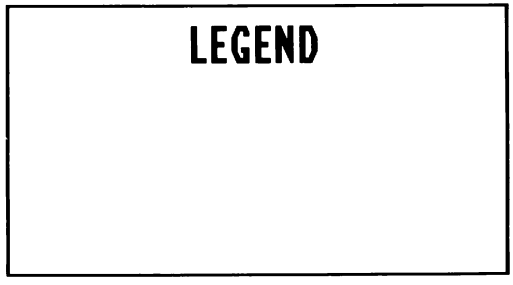
1. Select the Text tool from the tools and shapes palette.

   The Text tool is displayed in the current tool status box.

2. Point to the drawing window.
3. Click to mark where you want your text to begin.
4. Type the desired text.

Figure 23-2 shows the heading LEGEND, which labels a legend box.

Figure 23-2: Box with Text



Adding Patterns

The Fill and Filled Box tools add symbolic patterns to a drawing.

Drawing a Filled Box

To create a filled box:

1. Select the Patterns command from the Palette menu.
2. Select a pattern for the filled box.

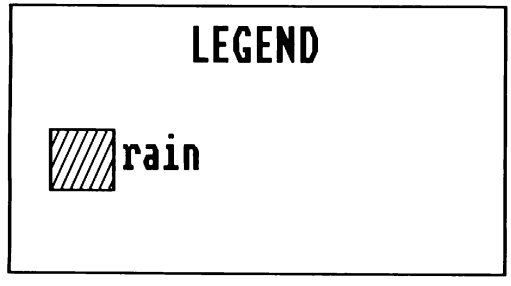
   The pattern is displayed in the current status box.
3. Select the Filled Box tool from the tools and shapes palette.

   The Filled Box is displayed in the current status box.
4. Draw a box.

   The pattern fills the box when you release the mouse button.

Figure 23–3 shows a filled box that is drawn and labeled to represent rain.

Figure 23–3: Filled Box



Filling a Shape

To fill a shape:

1. Select the Patterns command from the Palette menu.
2. Select a pattern to fill the shape.

   The pattern is displayed in the current status box.
3. Select a tool from the tools and shapes palette to draw the shape. For example, you can select the Box or the Polygon tools.

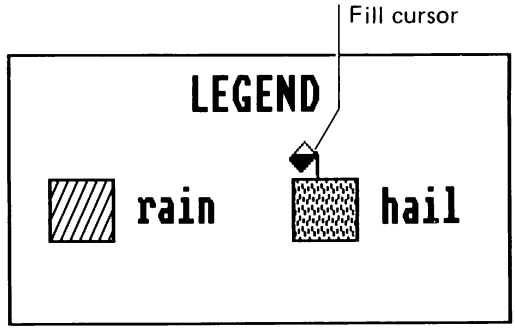
   The tool is displayed in the current status box.

4. Draw a shape.
5. Select the fill tool from the tools and shapes palette, place the tip of the pouring paint in the empty shape, and click on the mouse.

   The pattern fills the shape when you release the mouse button.

Figure 23–4 shows a box that is labeled and filled to represent hail.

Figure 23–4: Filling a Shape



Editing a Selection

You can edit a selection of a drawing. The following sections describe how to select part of a drawing, and how to edit with special effects and in detail.

Making a Selection

To edit a drawing, you must define areas of your canvas with the Selection Rectangle and the Selection Net tools.

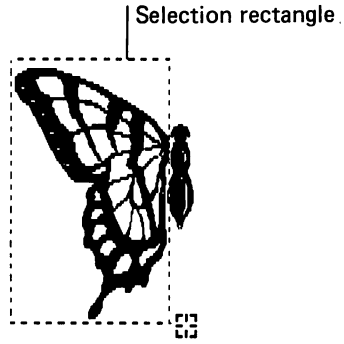
To select an area of a drawing:

1. Select the Selection Rectangle tool or the Selection Net tool from the tools and shapes palette.
2. Drag the cursor to enclose a selection of your drawing.

   The selected area is enclosed within a box if you are using the Selection Rectangle tool. The selected area is enclosed within a net if you are using the Selection Net tool.

Figure 23–5 shows a selected butterfly wing.

Figure 23–5: Selection Rectangle



Copying a Selection

Once you select an area of the canvas, you can copy it to the Clipboard, leaving the original still displayed. After you paste the area back to the canvas, you can move it to where you want.

To copy a selection:

1. Select the Copy command from the Edit menu.

   The selected area is copied to the Clipboard.

2. Select the Paste command from the Edit menu.

   The Clipboard contents are copied to the canvas inside a Selection Rectangle.

   The mouse cursor changes to an arrow, indicating that you can drag the selection.

3. Drag the Selection Rectangle inside the drawing window, then release the mouse button.

Editing with Special Effects

The special effects commands from the Edit menu enhance a selected area of your drawing.

For example, the Flip Horizontal command mirrors the selected area. For descriptions of other special effects commands, see Chapter 24.

To mirror and paste a selection:

1. Select an area or object.
2. Select the Flip Horizontal command from the Edit menu.

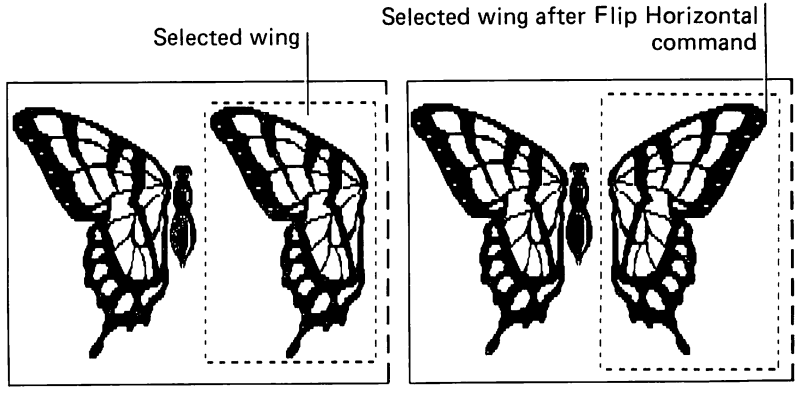
   The selected area, still enclosed in the Selection Rectangle, flips from left to right.
3. Drag the selected area into position.
4. Move the cursor out of the Selection Rectangle, then click the mouse button.

   The Selection Rectangle disappears, and the copy is pasted to your canvas.

Figure 23–6 shows a butterfly wing that is selected and mirrored.

Click the mouse button outside the Selection Rectangle to paste the copied wing in place.

Figure 23–6: Results of the Flip Horizontal Command



Editing in Detail

To perform detailed editing on a part of your drawing, use the Zoom In command and the Pencil.

To edit a drawing in detail:

1. Select the Pencil, then click to mark where you want to edit.

   The Pencil makes a mark at the point where you click.

   The mark is white if you click on a black area; it is black if you click on a white area.

2. Select the Zoom In command from the Options menu.

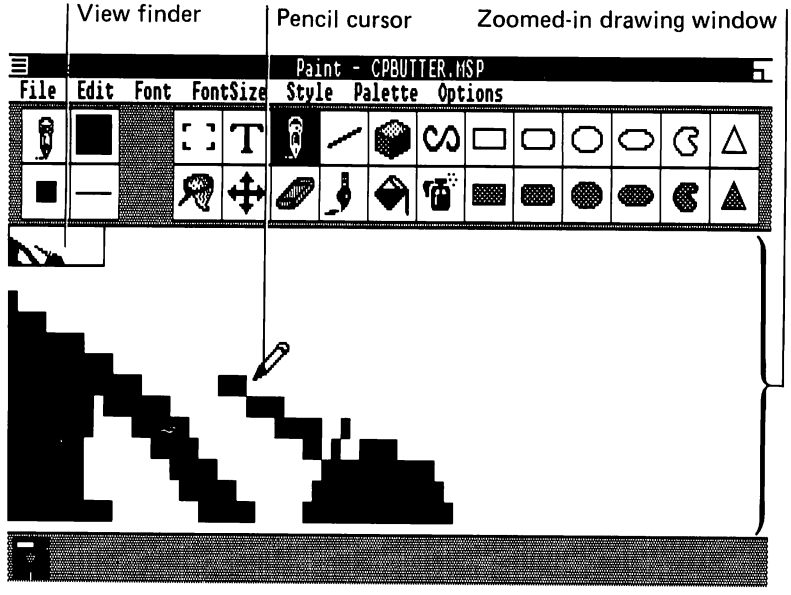
   MS-Paint zooms in to where you last released the mouse button. This view of the screen is called a zoomed-in drawing window.

3. Click to remove or add paint. Drag to make larger changes.

   The results of your editing appear in the upper-left corner of your canvas.

   Figure 23–7 shows an example of editing in detail.

Figure 23–7: Editing in Detail



4. When you are finished editing, select the Zoom Out command from the Options menu.

   The regular drawing window is displayed again.

Scrolling the Canvas

The Scroll tool can move the canvas under the drawing window.

To scroll to a lower area of a canvas:

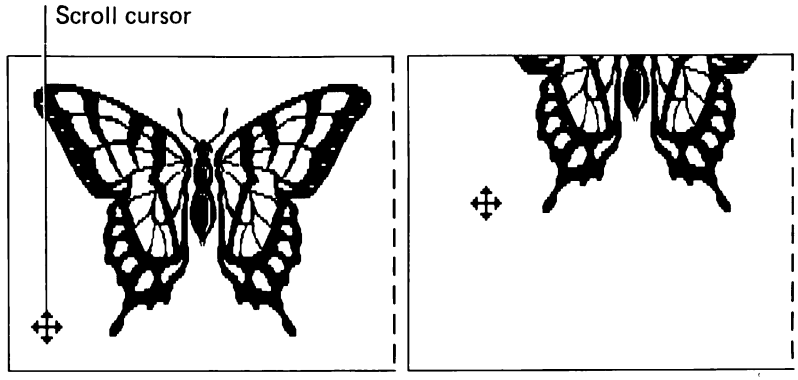
1. Select the Scroll tool from the tools and shapes palette and move the tool to the bottom of the drawing window.
2. Drag the Scroll pointer upward.

   The original area of the canvas scrolls up as the lower part of the canvas is displayed.

   The mouse cursor is displayed whenever MS-Paint adjusts the window display.

Figure 23–8 shows a butterfly that is scrolled to reveal the lower part of the canvas.

Figure 23–8: Scrolling the Canvas



Chapter 24
MS-Paint Command Summary

The MS-Paint commands that help you create, illustrate, and edit your canvasses are displayed in menus. You access menus through the menu bar near the top of the MS-Paint window.

This chapter describes the command menus in the order they are displayed in the menu bar:

- File
- Edit
- Font
- FontSize
- Style
- Palette
- Options

File Menu

The File menu commands create, save, and print your canvasses. Figure 24–1 shows the File menu commands. Table 24-1 describes the commands.

Figure 24–1: File Menu

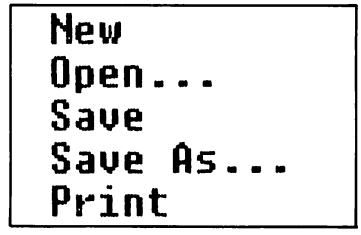


Table 24–1: File Menu Commands and Descriptions

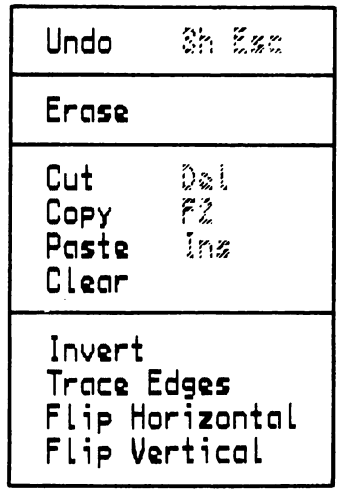
Command	Description
New	Clears the drawing window, then opens a new canvas. The status of the selected tool, pattern, brush shape, and line width is unchanged.
Open	Opens the drawing window over a previously created canvas. The status of the selected tool, pattern, brush shape, and line width is unchanged. A dialog box prompts you to either select a title from the list box or type the title of the canvas you want.
Save	Saves the current canvas on disk under the existing name. This command prompts you for a name if the file is untitled.
Save As	Saves the current canvas on disk. You can save either new, untitled canvases or a new version of a canvas under a different name. The original version remains unchanged.
Print	Prints the canvas. The Print command is disabled if you have not installed a printer through the Setup utility or on the Control Panel, or if you selected the For Screen command from the Options menu.

Both the Open and New commands let you save any changes to the current canvas before proceeding.

Edit Menu

The Edit menu commands let you edit a canvas. Figure 24–2 shows the Edit menu commands. Table 24-2 describes the commands.

Figure 24–2: Edit Menu



Except for the Erase, Undo, and Paste commands, all of the Edit menu commands require that you first select what you want to edit. The Selection Rectangle or the Selection Net tools select an area. The Paste command is disabled if the Clipboard is empty.

Several commands in the Edit menu are disabled until you select an area for editing.

Table 24–2: Edit Menu Commands and Descriptions

Command	Description
Undo	Cancels the most recent drawing action or edits performed on a selected area. Selecting Undo a second time restores these actions.
Erase	Erases the contents of the drawing window. You can also double-click on the Eraser to erase the drawing window.
Cut	Removes selected material from the canvas, and places it on the Clipboard.
Copy	Copies selected material to the Clipboard.
Paste	Copies the Clipboard contents into a selection box on the drawing window. The items you paste remain selected (and movable) until you click outside the selected area, make another selection with the Selection Rectangle or the Selection Net, or begin to draw again. You can paste the contents of the Clipboard as many times as you want.
Clear	Erases the selected item from the drawing window.
Invert	Changes the appearance of the selected area. This command changes a black area to white, and a white area to black.
Trace Edges	Traces the edges of the patterns, text, and shapes within a selected area. This command acts on selections made with the Selection Rectangle tool.
Flip Horizontal	Flips the selected area from left to right around a vertical axis. This command acts on selections made with the Selection Rectangle tool.
Flip Vertical	Flips the selected area from top to bottom around a horizontal axis. This command acts on selections made with the Selection Rectangle tool.

Font Menu

The Font menu contains the commands that select the text typeface. The Font menu commands vary according to the fonts installed for your system.

You can continue to change the typeface of a new text sequence only until you click again within the drawing window or select another tool.

FontSize Menu

The FontSize menu sets the size of your text. The FontSize menu commands vary according to the font sizes installed for your system.

You can continue to change the font size of a new text sequence only until you click again within the drawing window or select another tool.

Style Menu

The Style menu commands modify the appearance of text. Figure 24-3 shows the Style menu commands. Figure 24-4 shows the Style menu typefaces. Table 24-3 describes the other Style menu commands.

Plain is the default typeface.

You can continue to change the style of a new text sequence only until you click again within the drawing window or select another tool.

Figure 24-3: Style Menu

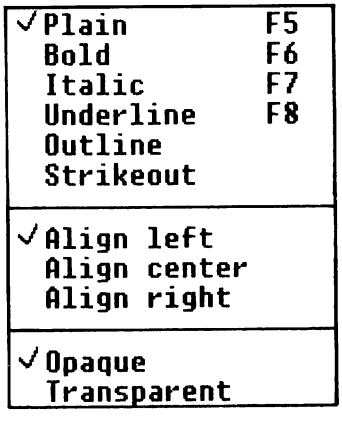


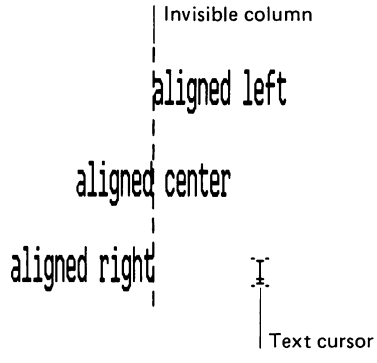
Figure 24–4: Style Menu Typefaces

Table 24–3: Style Menu Commands and Descriptions

Command	Description
Align Left	Aligns rows of text using an invisible column marker in the drawing window as a left margin. Your text moves to the right as you type. This is the default setting. Click on the text pointer to mark another location or to change the location of the invisible column marker.
Align Center	Centers text on both sides of the invisible column.
Align Right	Aligns text using the column as a right margin. Your text moves to the left as you type.
Opaque	Provides a solid white background for text. This is the default setting.
Transparent	Lets the current background pattern show through text.

Figure 24–5 shows examples of the Align Left, Align Center, and Align Right commands.

Figure 24-5: Example Align Commands



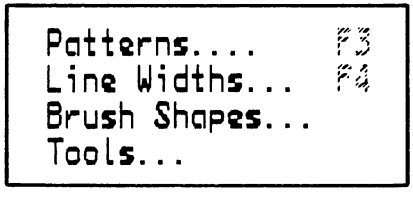
Palette Menu

The Palette menu commands select:

- Paint patterns
- Line widths for shapes
- Brush shapes

Figure 24-6 shows the Palette menu commands.

Figure 24-6: Palette Menu



The Tools command selects MS-Paint's tools when they are concealed by another drawing window.

Options Menu

The Options menu commands:

- Control the alignment and placement of your drawings,
- Edit with greater detail
- Enhance the display of patterns in the patterns palette for the current session

Figure 24-7 shows the Options menu commands. Table 24-4 describes the commands.

Figure 24-7: Options Menu

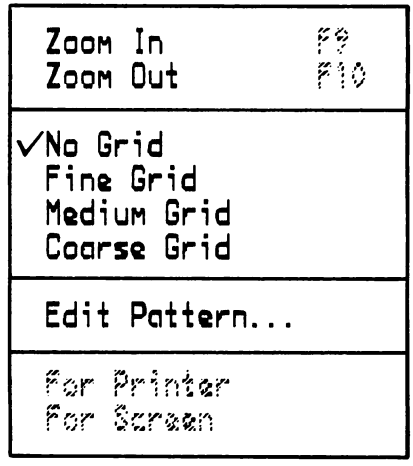


Table 24–4: Options Menu Commands and Descriptions

Command	Description
Zoom In	Zooms in on your canvas at the point where you last released the mouse button. Zoom In also returns a zoomed-out drawing window to its normal size. MS-Paint's zoomed-in drawing window has a view finder in the upper-left corner. You view the effects of magnified editing in your canvas in this area. You can also double-click on the Pencil to zoom in or return from a zoomed-in drawing window to the normal drawing window.
Zoom Out	Displays the entire canvas with the current drawing window outlined. Zoom Out also returns a zoomed-in drawing window to its normal size. You can also double-click on the Scroll tool to zoom out to the full canvas or return from the full canvas to the normal drawing window.
No Grid	Turns off any active setting. This is the default setting.
Fine Grid, Medium Grid, Coarse Grid	Lay an invisible grid on the drawing window. These commands let you align the shapes and lines.
Edit Pattern	Opens a dialog box to allow revision of the current MS-Paint pattern.
For Printer	Informs MS-Paint that the canvas is targeted for the default MS-Windows printer.
For Screen	Informs MS-Paint that the canvas is targeted for the screen.

Chapter 25
Messages

This chapter lists and discusses:

- Disk and device messages
- MS-Windows 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 an abbreviation after it, capitalized and enclosed in parentheses, to indicate the program that generated the message. The following abbreviations are used for messages in this chapter:

(TE)	Messages generated by the VT220 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 displays the following message:

```
(type) (action) drive x
Abort, Retry, Fail ?
```

Where:

type — Is one of the following:

Bad call format error	Bad command error
Bad unit error	Data error
PCB 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.
F	Retries the operation. Use this response after you correct the error.

For more information about disk and device errors, see the *MS-DOS Reference Guide*.

Messages

%SCR - Error. Check ERROR.LOG for explanation. (TE)

Cause: You have an error in your script file.

Action: Access the ERROR.LOG file to see what line in your script file generated the error. For more information on the ERROR.LOG file, see Chapter 13.

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.

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 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 can 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 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.

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:

1. You tried to save your work to a read-only file.
2. 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 directory (WIN)

Cause: Any of the following things occurred:

1. You tried to create a directory using a name that already exists in the current directory or the drive is not ready.
2. You tried to create a directory on a disk that is write-protected.
3. You tried to create a directory on a disk that is read-only.

Action: Try one of the following:

1. Retry the command with a unique directory name.
2. If the disk is read-only, use the ATTRIB command to change its attributes.
3. If you tried to create the directory on a diskette that is write-protected, remove the write-protection tab. Retry the command.

Cannot delete 'filename' (WIN)

Cause: Either of two things occurred:

1. You tried to delete a file on a write-protected diskette.
2. You tried to delete a read-only file.

Action: Try one of the following:

1. Remove the write-protection tab and retry the command.
2. Use the ATTRIB command to change the file's attributes so that you can delete it.

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 find 'filename' (WIN) (TE)

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 format diskette (WIN)

Cause: The diskette is defective or a read-only diskette or the drive is not ready.

Action: Try one of the following:

1. Be sure the drive door is closed.
2. Replace the diskette if it is defective and retry the command.
3. Remove the write-protect tab and retry the command.

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 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 initialized 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:

1. COMMAND.COM in the root directory
2. IO.SYS
3. MSDOS.SYS

The destination diskette must meet these requirements:

1. The first two directories are empty.
2. The first n clusters are free, where n is enough room for IO.SYS and MSDOS.SYS.
3. There is enough room on the disk for IO.SYS, MSDOS.SYS, and COMMAND.COM.

Or, the destination diskette must meet these requirements:

1. The first two directory entries are IO.SYS and MSDOS.SYS.
2. The first n clusters are allocated to these files, where n is enough room for IO.SYS and MSDOS.SYS.
3. 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:

1. MS-Windows could not read from the specified device.
2. 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:

1. There was no disk in the specified drive.
2. The disk drive door was open or the disk was not inserted properly.
3. MS-Windows could not read the disk in the drive you specified.
4. The disk was defective, damaged, or not formatted.
5. 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 rename 'filename' (WIN)

Cause: The specified file does not exist in the current directory or on the disk.

Action: Make sure the file name exists, then retry the command. You cannot rename a directory.

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:

1. The diskette is write protected.
2. The diskette is full.
3. The drive is a network device.

Action: Try one of the following:

1. If you are trying to set the volume name for a diskette, remove the write-protect tab. Retry the command.
2. Check the directory to see if any files can be removed, then try again.

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:

1. MS-Windows cannot write to the specified device.
2. The specified device is not available for output. Be sure the device is properly set up (and, if appropriate, turned on).
3. 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:

1. There is no disk in the specified drive.
2. The floppy drive door is open, or the diskette is improperly inserted.
3. MS-Windows cannot write to the diskette in the drive you specified.
4. The diskette is defective, damaged, or not formatted.
5. 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.

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.

COM1 and COM2 is not available (WIN)

Cause: Either of two things occurred:

1. The application that you select requires access, but cannot access, the serial communications port 1 (COM1) or serial communications port 2 (COM2).
2. 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:

1. The application you have select requires access, but cannot access, the serial communications port 1 (COM1).
2. 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:

1. The application that you select requires access, but cannot access, the serial communications port 2 (COM2).
2. 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 exit 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.

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.

'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 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.

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.

Error in EXE file (WIN)

*Cause:*You attempted to run an application that directly modifies memory from within a standard application.

*Action:*You must run this application outside of MS-Windows.

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.

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.

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.

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.

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 exit 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 is made to the network.

Network Terminal Services driver not installed (TE)

Cause: The Network Terminal Services driver was not installed prior to starting MS-Windows.

Action: Close the session, install the driver, and restart the session. To install the driver, type:

```
A:>NET START LAT Return
```

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.

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 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 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:

1. MS-Windows tried to run a program that required more memory than was currently available.
2. Your version of MS-Windows does not support one or more of the run-time routines.

Action: Try one of the following:

1. Close one or more applications. Select the Run command again.
2. 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.

Printer not ready (WIN)

Cause: Either of two things occurred:

1. The printer is out of paper.
2. The printer is off or not ready.

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.

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 that when you run a new version of the VT220 emulator that your Set-Up files are compatible with the new version. Delete or update the old file by entering Set-Up, making the parameter settings you desired, and saving them with the 'Save Set-Up Parameters' option.

Start session error (TE)

Cause: There was an error accessing the Network Terminal service. The service cannot be initiated.

Action: Contact your system administrator.

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 DECKEYB 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.

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.

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.

Appendix A
Information About the WIN.INI File

This appendix describes the WIN.INI file, which contains some applications and settings for many MS-Windows features and applications. MS-Windows checks the WIN.INI file and uses these settings each time you start MS-Windows or an MS-Windows application.

> **NOTE**
> You rarely need to change the WIN.INI file. The Configuration Aide creates the WIN.INI file on the key diskette. This appendix provides the instructions primarily for special system customization. The settings in your WIN.INI can vary from those shown here.

You should print a copy of the WIN.INI file before you change it, using the Print command from the MS-DOS Executive window.

MS-Windows searches for the WIN.INI file in the directory from which you start MS-Windows. If MS-Windows does not find the WIN.INI file in that directory, MS-Windows searches the directories given in the path.

You can place comments in the WIN.INI file by making the first nonspace character a semicolon (;). Comments cannot contain equal signs.

Table A-1 describes the sections of the WIN.INI file that affect MS-Windows settings.

Table A–1: Sections of the WIN.INI File

Section	Setting
Windows	Controls the loading of the spooler.
	Sets double-click speed.
	Sets cursor blink speed.
	Specifies the file extensions listed in the MS-DOS Executive window with the Programs command.
	Defines the name for the null port.
	Starts applications as icons.
	Starts applications in windows.
	Defines default printer device.
	Swaps the action of the mouse buttons.
Extensions	Starts an application when you select a file with the specified file extension.
Colors	Specifies the shades of gray in the MS-Window's display screen.
PIF (Program Information File)	Defines swap disk and swap size. Specifies program information entries for applications used with MS-Windows.
Ports	Defines the communications ports you can use.
International	Defines MS-Windows for operation in foreign countries.
DECLAT	Redirects the communications ports to a network terminal service.
DECKeybd	Sets the keyboard operations settings.
DECInfo	Defines the location of the on-line Information System.
Devices	Defines the output devices recognized by MS-Windows.
Fonts	Defines the display fonts MS-Windows can use.

Changing the WIN.INI File

Before you change the WIN.INI file, you should be familiar with MS-Windows and MS-Windows applications such as Notepad.

To change the WIN.INI settings, use:

- The MS-Windows Control Panel

  This is the preferred method for making changes, because MS-Windows edits the file for you. Any changes made with the Control Panel take effect immediately.

- The Notepad application to edit the WIN.INI file

  Any changes made with an editor do not take effect until MS-Windows is restarted.

NOTE

You can use any text editor that produces an ASCII file to edit the WIN.INI file. Do not use any editors that include special formatting characters in addition to the standard ASCII formatting commands.

Edits made with a text editor do not take effect until MS-Windows is restarted.

The following sections describe the sections of the WIN.INI file.

Windows Section

The Windows section contains settings that take effect when MS-Windows is started.

NOTE

In the Windows section, you change some settings with the Control Panel and some with an editor. To change the double-click speed, cursor blink rate, default device, and swap mouse button settings, use the Control Panel. To change the programs, load, run, spooler, and null port settings, use Notepad.

Format

```
[windows]
spooler=setting
DoubleClickSpeed=speed
CursorBlinkRate=speed
programs=list
NullPort=port
load=list
run=list
device=name,driver,port
SwapMouseButtons=setting
```

Where:

spooler = setting

Determines whether the spooler is used when printing. The setting can be:

Yes	The spooler is used when printing.
No	The spooler is not used when printing.

DoubleClickSpeed = speed

Sets the speed in milliseconds for the double-click operation of the mouse. Speed can be 0 to 65535 ms.

CursorBlinkRate = speed

Sets the speed in milliseconds for the cursor blinking action. Speed can be 0 to 65535 ms.

programs = list

Specifies the files displayed in the MS-DOS Executive window when you select the Programs command from the View menu. The list contains the file extensions without the period. Separate the file extensions with spaces.

NullPort = port

Defines the name for the null port to a specified port. The Control Panel, Spooler, and other applications use this port when an output device is installed, but is not connected to any port.

load = list

Starts the specified applications as icons when you start MS-Windows. The list contains the application file names as they are displayed in the MS-DOS Executive window without the file extension. (For example, Calculator is CALC, because CALC.EXE is the application file name.) Include a space between the file names. MS-Windows first searches the current drive, the directory, then the path. Otherwise, specify a path name.

The MS-DOS Executive starts automatically as an icon, if it is not started in a window.

You can create an icon that starts an application and opens a data or text file by adding the file name and the file extension to the load setting.

To use this option, you must define the application in the Extensions section of the WIN.INI file.

For example, DOTHIS.TXT starts Notepad because .TXT is in the Extensions section, starting the Notepad application.

run = list

Starts the specified applications in windows when you start MS-Windows. You list the file names exactly as they are displayed in the MS-DOS Executive window without the file extension. (For example, enter Calculator as CALC, because CALC.EXE is the application file name.)

Include a space between the file names. MS-Windows first searches the current drive, the directory, then the path. Otherwise, specify a path name.

You should not specify a file name either for a special application or for an application that uses a large amount of memory; otherwise, you will enter an endless loop when you exit from the application.

You can arrange windows by using spaces to designate windows within the same column, and commas to designate a new column.

You can start an application and open a data or text file in a window when you start MS-Windows by adding the file name and the file extension in the run setting. To use this option, you must define the application in the Extensions section of the WIN.INI file.

device = name,driver,port

Defines the default printer (or plotter):

name	Is the name of the default device. You must also specify this default device in the Devices section.
driver	Is the file containing the device's printer file name without the file extension.
port	Is the port to which the device is connected. You must also specify this port in the Ports section.

SwapMouseButtons = setting

Swaps the functions performed by the left and right mouse buttons. Setting can be:

No	The left mouse button controls the mouse functions. This is the default.
Yes	The right mouse button controls the functions.

Windows Section Example

The following Windows section:

- Enables the spooler when printing.
- Sets the mouse double-click speed to 900 ms.
- Sets the cursor blink rate to 550 ms.
- Specifies that files with the .COM, .EXE, and .BAT file extensions are displayed in the MS-DOS Executive window when you use the Programs command.
- Specifies None as the null port.
- Using no file specifications, starts Notepad and Calculator as icons, and starts Notepad with the text file ONGOING.TXT.

- Starts Clock in the first window of the first column, Calculator in the second window of the first column, Notepad in the first window of the second column, and Notepad with the file specification K:\MEMOS\ONGOING.TXT in the second window of the second column.
- Sets the default printer to a DIGITAL LA75, which is connected to the LPT1: port.
- Does not switch the left and right mouse buttons.

Example

```
[windows]
spooler=yes
DoubleClickSpeed=900
CursorBlinkRate=550
program=com exe bat
NullPort=None
load=notepad calc ongoing.txt
run=clock calc,notepad K:\memos\ongoing.txt
device=Digital LA75,LA75,LPT1:
SwapMouseButtons=No
```

Extensions Section

In the Extensions section, you can specify file extensions that let you start an application and open a file in a single operation. When you select a file with the specified file extension, MS-Windows starts the application and opens the file in one step.

NOTE

To change the Extensions section, use the Notepad application.

Format

```
[extensions]
extension=application filename
```

Where:

extension	Is the file extension that starts the specified application.
application	Is the name of the application that is started. You must include the application's extension (.EXE).
parameter	Is the name and extension of the file (optional) for the application to open. You can use a caret (^) to represent any file with that extension (for example, ^.TXT). Then you can select any file with the specified extension, and MS-Windows starts the application with that file.

Extensions Section Example

The following Extensions section:

- Starts the Notepad application when you use the MS-Windows Run command with a file containing a .TXT file extension.
- Starts the Notepad application when you use the MS-Windows Run command with a file containing an .INI file extension.
- Starts the MS-Paint application when you use the MS-Windows Run command with a file containing an .MSP file extension.

Example

```
[extensions]
txt=notepad.exe ^.txt
ini=notepad.exe ^.ini
msp=paint.exe ^.msp
```

Colors Section

Purpose

The Colors section specifies the shading for various components of the MS-Windows screen.

NOTE

To change the Colors section, use the Control Panel.

Format

```
[colors]
component=redvalue greenvalue bluevalue
```

Where:

component

Specifies the component of the MS-Windows screen. The component can be:

Window	Is the nontextual background of the window work area.
WindowText	Is the textual display in the window work area.
Scrollbar	Is the scroll bar.
ActiveTitle	Is the background of the active title bar.
InactiveTitle	Is the background of the inactive title bar.
TitleText	Is the application title's text.
WindowFrame	Is the set of lines that form the frame of the window and the nontextual part of the application's title background.
Menu	Is the nontextual background of the menu area.
MenuText	Is the textual display in the menu area.
Background	Is the icon area and screen background.

redvalue

Is a number that specifies the intensity of red used. The number can be 0 to 255.

greenvalue

Is a number that specifies the intensity of green used. The number can be 0 to 255.

bluevalue

Is a number that specifies the intensity of blue used. The number can be 0 to 255.

> **NOTE**
> Because you have a monochrome screen, the redvalue, greenvalue, and bluevalue settings affect the gray scale of the MS-Windows components. The low end of the gray scale is 0, and the high end of the gray scale is 255. Therefore, if all three settings are 0 (setting=0 0 0), the color is black. If all three settings are 255 (setting=255 255 255), the color is white. Settings between 0 and 255 produces varying shades of gray.

Color Section Example

The following Colors section:

- Sets the nontextual background of the window work area to white.
- Sets the textual display in the window work area to black.
- Sets the scroll bar to a shade of gray.
- Sets the active title bar background color to black.
- Sets the inactive title bar background color to a shade of gray.
- Sets the application title to white.
- Sets the lines that form the frame of the window and the nontextual part of the application's title background to black.
- Sets the nontextual background of the menu area to white.
- Sets the textual display in the menu area to black.
- Sets the icon area and screen background to a shade of gray.

Example

```
[colors]
Window=255 255 255
WindowText=0 0 0
Scrollbar=192 192 192
ActiveTitle=0 0 0
InactiveTitle=128 128 128
TitleText=255 255 255
WindowFrame=0 0 0
Menu=255 255 255
MenuText=0 0 0
Background=128 128 128
```

PIF Section

Purpose

The PIF section lists the information that MS-Windows uses to swap programs to disk. MS-Windows uses the swap area to swap applications that cannot operate in a window. Two settings (SwapDisk and SwapSize) determine where MS-Windows swaps an application and the minimum swap space.

The PIF section creates a program information entry for standard applications used in a window. MS-Windows uses the program information entry rather than a program information file (PIF). The preferred method is to create a PIF. For more information on PIFs, see Appendix B.

NOTE

To change the PIF section, use Notepad.

Format

```
[pif]
swapdisk=setting
swapsize=setting
program=memory
```

Where:

SwapDisk = setting

Is the disk to which MS-Windows swaps the application. The setting can be:

?	Swaps to the first fixed disk on the system. This is the default.
drv	Swaps to that drive. Drv is any valid drive letter.
0	Disables swapping.

NOTE

Do not set a diskette drive as the swap disk.

SwapSize = setting

Is the amount of memory MS-Windows uses to swap an application. The setting can be:

0	Is the amount of memory based on the size of the first application that MS-Windows swaps. You should start the largest application first. This is the default.
size	Is the reserved minimum amount of memory in Kbytes that MS-Windows uses to swap applications. When you determine the size, consider the application size, the space for screen exchange, the space for screen switching, and 2K bytes of overhead for saving information about the application's current state.

program = memory

Is the application name for which you want to create a program information entry. Memory is the amount of memory in Kbytes required to start the application. See the application documentation to find the memory requirements for the application.

When memory is 1, it indicates a special application.

MS-Windows assumes the following default settings for a program information entry:

Program Title	File name without extension
Initial Directory	None
Parameters	None
Memory Required	Specified to the right of the equal sign
Memory Desired	Same as memory required
Screen Exchange	Text
Program Switch	Text
Directly Modifies	None
Close Window on Exit	No

PIF Section Example

The following PIF section:

- Sets the swap disk to the default.
- Sets the swap size to the default.
- Creates a program information entry for COMMAND.COM with a 32K byte memory requirement.

Example

```
[pif]
swapdisk=?
swapsize=0
command.com=32
```

Ports Section

Purpose

The Ports section lists the available communication ports for a workstation and defines the default modes or settings. The Ports section can include up to eight entries.

NOTE

To change the Ports section, use the Control Panel.

Format

```
[ports]
port:=baudrate,parity,wordlength,stopbits
filename.PRN=
```

Where:

port:

Is the name of the available communication port. Port can be LPT1:, LPT2:, LPT3:, COM1:, or COM2:.

If the port is COM1: or COM2:, you must specify in order the:

baud rate	Is the port's baud rate.
parity	Is the parity setting: o (odd), e (even), or n (none).
word length	Is the length of a word, in bits.
stop bits	Is the number of stop bits.
retry (print/send)	Controls continuous retry on a timeout. This option is used if the port is used only for a serial printer. If you leave this option blank, the current setting does not change. The retry options are: p which enables continuous retry on a timeout - which disables continuous retry on a timeout

filename.PRN=

Sends printer output to a file rather than to a printer device. MS-Windows prints the information in the file name you specify. You must include the .PRN file extension. MS-Windows overwrites the file with each print job.

Ports Section Example

The following Ports section:

- Defines the LPT1: communication port.
- Defines the LPT2: communication port.
- Defines the COM1: communication port with 9600 baud rate, no parity check, 8 bit word length, 1 stop bit, and enabled retry.
- Defines the COM2: communication port with 2400 baud rate, no parity check, 8 bit word length, 1 stop bit, and disabled retry.
- Defines OUTPUT.PRN as a file for printer output.

Example

```
[ports]
LPT1:=
LPT2:=
COM1:=9600,n,8,1,p
COM2:=2400,n,8,1
OUTPUT.PRN=
```

International Section

Purpose

The International section tells MS-Windows how to display dates, times, dollar amounts, and other items in countries other than the United States.

NOTE

To change the International section, use the Control Panel.

Format

```
[intl]
dialog=setting
itemname=setting
```

Where:

dialog = setting

Allows changes to the International section through the Control Panel. The setting can be:

Yes	Enables the international dialog box.
No	Disables the international dialog box.

itemname

Is the item you want to set. The setting can be:

iCountry	Defines the country code.
iDate	Defines the format for the date where:
	0 for month-day-year
	1 for day-month-year
	2 for year-month-day
iCurrency	Defines the format for currency where:
	0 for currency symbol prefix, no separation
	1 for currency symbol suffix, no separation
	2 for currency symbol prefix, 1 character separation
	3 for currency symbol suffix, 1 character separation

iDigits	Defines the number of significant decimal digits in the currency.
iTime	Defines the format for the time where: 0 for 12-hour clock 1 for 24-hour clock
iLzero	Defines the use of leading zeros where: 0 for no leading zeros 1 for leading zeros
s1159	Defines trailing string from 0:00 to 11:59.
s2359	Defines trailing string from 12:00 to 23:59.
sCurrency	Defines currency symbol.
sThousand	Defines thousands separator.
sDecimal	Defines decimal separator.
sDate	Defines date separator.
sTime	Defines time separator.
sList	Defines list separator.

International Section Example

The following International section:

- Allows changes to the International section through the Control Panel.
- Defines the country as the U.S.
- Defines a month-day-year date format.
- Defines a 0 currency symbol prefix with no separation for the currency format.
- Defines two significant decimal digits in the currency.
- Defines a 12-hour clock.
- Defines the use of no leading zeros.
- Defines an AM to be attached to time from 0:00 to 11:59.
- Defines a PM to be attached to time from 12:00 to 23:59.

- Defines $ as the currency symbol.
- Defines , as thousand separator.
- Defines . as decimal separator.
- Defines / as date separator.
- Defines : as time separator.
- Defines , as list separator.

Example

```
[intl]
dialog=yes
iCountry=1
iDate=0
iCurrency=0
iDigits=2
iTime=0
iLzero=0
s1159=AM
s2359=PM
sCurrency=$
sThousand=,
sDecimal=.
sDate=/
sTime=:
sList=,
```

DECLAT Section

Purpose

The DECLAT section redirects the communication ports to a network terminal service.

NOTE

To change the DECLAT section, use the Control Panel.

Format

```
[DECLAT]
port=service
```

Where:

port	Is the communication port that you want to redirect. Port can be COM1: or COM2:. Service is the network terminal service to which you want to connect. You do not have to specify a particular network terminal service.

DECLAT Section Example

The following DECLAT section:

- Defines the COM1: communication port. It is not redirected to any network terminal service.
- Defines the RANGER network terminal service to the COM2: communication port.

Example

```
[DECLAT]
COM1:=
COM2:=RANGER
```

DECKeybd Section

Purpose

The DECKeybd section specifies the keyboard settings.

> **NOTE**
> To change the DECKeybd section, use the Control Panel.

Format

```
[DECKeybd]
keyclick=setting
repeat=setting
lock=setting
```

Where:

keyclick = setting

Specifies the volume of sound generated by the keyboard. The setting can be from 0 to 3 where 0 is no volume and 3 is maximum volume. The default is 2.

repeat = setting

Specifies whether the repeat key feature is used. The setting can be:

0	Turns off the repeat key feature.
1	Turns on the repeat key feature.

lock = setting

Specifies the caps lock or shift lock feature of the keyboard. The setting can be:

0	Sets the caps lock feature, which capitalizes the letters on the keyboard when you press the Lock key.
1	Sets the shift lock feature, which acts as if the Shift key is always pressed.

DECKeybd Section Example

The following DECKeybd section:

- Sets the key click to medium volume.
- Turns on the repeat key feature.
- Sets the caps lock feature.

Example

```
[DECKeybd]
keyclick=2
repeat=1
lock=0
```

DECInfo Section

Purpose

The DECInfo section specifies to MS-Windows the location of the on-line Information System files. You should not need to change any of these settings.

> **NOTE**
> To change the DECInfo section, use the Notepad application.

Format

```
[DECInfo]
DBpath=pathname
DBname=database
BMpath=pathname
```

Where:

DBpath	Specifies the location of the on-line Information System database files by the specified path name.
DBname	Specifies the name of the on-line Information System database.
BMpath	Specifies the location of user specific information regarding the on-line Information System by the specified path name. For example, the Bookmark file contains information specific to you.

DECInfo Section Example

The following DECInfo section:

- Defines the location of the on-line Information System data files as drive H in the DECAPP subdirectory.
- Defines the name of database as INFOUSER.
- Defines the location of your specific information regarding the on-line Information System as drive I.

Example

```
[DECInfo]
DBpath=H:\DECAPP
DBname=INFOUSER
BMpath=I:\
```

Devices Section

Purpose

The Devices section identifies a workstation's output devices, the printer files, and the port connections.

> **NOTE**
> To change the Devices section, use the Control Panel.

Format

```
[devices]
device=driver,port[,port]
```

Where:

device		Is the name of the output device where:
	driver	Is the file name of the device's printer driver.
	port	Is the name of the communication port or print file to which the device is connected (optional). Port can be LPT1, LPT2, LPT3, COM1, or COM2. If a device is not currently connected, the port should be the port specified in the NullPort setting of the Windows section.

Devices Section Example

- Defines the DIGITAL LN03 printer as connected to the null port and to the LPT3: communication port.
- Defines the DIGITAL LA75 printer as connected to the LPT1: communication port.
- Defines the IBM Graphics printer as the null port.

Example

```
[devices]
Digital LN03=LN03,None,LPT3:
Digital LA75=LA75,LPT1:
IBM Graphics=IBMGRX,None
```

Fonts Section

Purpose

The Fonts section identifies one or more font types that MS-Windows applications can use for display.

> **NOTE**
> To change the Fonts section, use the Control Panel.

Format

```
[fonts]
fontname=fontfile
```

Where:

fontname	Is the descriptive name of a font. The fontfile is the name of the file containing the font resources. Do not use the file extension.

Fonts Section Example

The following Fonts section:

- Defines the Courier font.
- Defines the Helvetica font.

Example

```
[fonts]
Courier 8,10,12 (Set #3)=COURC
Helv 8,10,12(Set#3)=HELVC
```

Appendix B
Program Information Files

This appendix describes how to:

- Use Program Information Files (PIFs)
- Use the PIF editor
- Select PIF options
- Use default settings
- Decide what to put in a PIF
- Change PIFs
- Give applications more memory

Using Program Information Files

A program information file (PIF) is a file that contains information about a standard application. It has the file extension .PIF. When you run a standard application, MS-Windows looks for a PIF to configure the application.

PIFs for most popular standard applications are included with your MS-Windows software package. During setup, the Installation Aide installs PIFs in the PIF subdirectory to establish a PIF library. You probably will not enter information into a PIF unless you use a standard application that does not have a PIF.

NOTE

If you try to run a standard application that does not have a PIF, MS-Windows automatically uses a set of default application characteristics. MS-Windows displays a dialog box asking if it should "Continue with default settings." You should create a PIF, using the correct values from your application documentation.

If you run an application by selecting the file name of the application (files that have the file extension .EXE, .COM, or .BAT), the PIF must have the same file name and the file extension .PIF. For example, if you use dBASE II, its application file name is DBASE.EXE, and its PIF must be DBASE.PIF.

You can also run an application by selecting its PIF in the MS-DOS Executive window. This automatically loads and runs the application named in the PIF. In this case, the PIF does not have to have the same file name as the application.

The preferred method is to run a standard application by selecting its PIF. This allows you to have customized PIFs, which are several PIFs containing different settings for the same application. Therefore, you can customize an application to the needs of different users, each with their own specific MS-Windows environment.

For example, one version, APPLARGE.PIF, may need a large amount of memory for those that use all of its features, and a second version, APPSMALL.PIF, may need less memory for those who use only a few of its features.

Additionally, each user can have customized values for the Program Parameters or Initial Directory fields in their PIFs. Customized PIFs must be in the user's personal directory.

The PIF must be in your directory or in your path. It should be copied from the PIF subdirectory to the directory from which you run the application.

In some cases, different applications use the same file name to start up. Therefore, some PIFs can have names that differ from their applications. If you are not sure which application a PIF works with, run the PIF editor and open the PIF to see which application the PIF was designed for, then copy the PIF to the appropriate drive and directory, and rename the file.

Some applications can have more than one .EXE, .COM, or .BAT file on their disk. You need a separate PIF for each file.

Using the PIF Editor

To create or edit a PIF, use the PIF editor. For example, you can change the application settings to increase the amount of memory available to the application or to set its initial directory.

To get on-line help about using the PIF editor:

1. Select the About command from the System menu.

   A dialog box is displayed that lists topics about PIFs.

2. Select a topic from the list box.

3. Select the Help command button.

   Information about the selected topic is displayed in the dialog box. You may need to scroll to see all the information.

   By using the command buttons in the dialog box, you can obtain information about other PIF topics.

When you finish using the PIF help feature, select the Cancel command button.

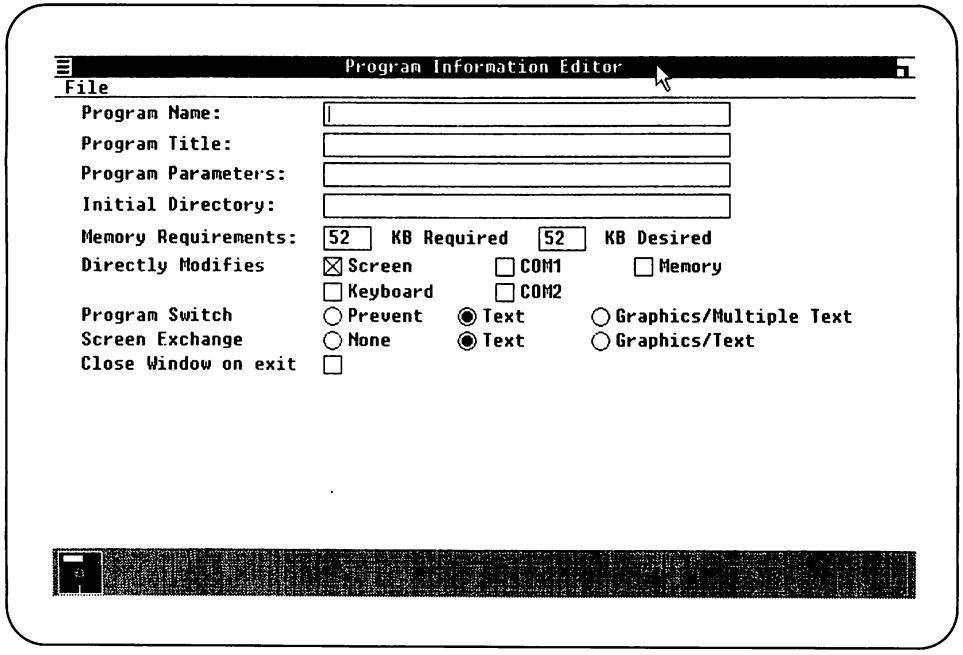
Creating a PIF

To create a new PIF:

1. Use the Run command in the MS-DOS Executive window to start the PIF editor application. The file name of the PIF editor is PIFEDIT.EXE.

   The Program Information Editor window is displayed. Figure B-1 shows the Program Information Editor window.

Figure B–1: Program Information Editor Window



2. Type the file name of the application to be associated with the PIF in the Program Name text box. Include the file extension (.EXE, .COM, or .BAT).
3. Select the options or values that apply to the application. (For more information, see the section "Selecting PIF Options" in this appendix.)
4. Select the Save command from the File Menu to save the new PIF.

To create another PIF, select the New command from the File Menu to reset the PIF editor screen.

Editing PIFs

To edit an existing PIF:

1. Use the Run command in the MS-DOS Executive window to start the PIF editor. The file name of the PIF editor is PIFEDIT.EXE.
2. Select the Open command from the File Menu.
3. Select the PIF you want to change from the list box or type the name of the PIF in the text box.
4. Select the Open button.
5. Make the desired changes by selecting the PIF options you want.
6. Select the Save command from the File Menu to save the changes.

Selecting PIF Options

PIF options are organized into these categories:

- Program Name
- Program Title
- Program Parameters
- Initial Directory
- Memory Requirements
- Directly Modifies
- Program Switch
- Screen Exchange
- Close Window on exit

Program Name

Every application (program) must have a file name assigned.

Type the path and file name of the application, including the file extension .EXE, .BAT, or .COM. For example, DBASE.COM is a file for the application DBASE. What you enter is displayed in the MS-DOS Executive window directory.

Program Title

You can enter a descriptive title for the application to help the user identify it on the screen.

What you enter is displayed in the title bar of the window, if the application runs in a window. This same title is also displayed above the icon of the application when you highlight the icon in the icon area.

> **NOTE**
> The PIF editor lets you enter 37 characters in the text box; however, it displays only 29 characters in the title box.

Program Parameters

The Program Parameters option lets you pass information to an application when you start the application. In the Program Parameters test box, you can type either of the following:

- Question mark (?)

  If you type a question mark, MS-Windows displays a dialog box when you start the application. The dialog box prompts you for application parameters. You can enter up to 126 characters in the dialog box, and PIFEDIT accepts up to 126 characters. Any extra characters are ignored.

- Specific program parameters

  If you type specific parameters, those application parameter values are used every time the application is started. You can enter up to 37 characters in the Program Parameters text box.

You should not redirect input and output or use piping. For more information on piping, see the *MS-DOS Reference Guide* or the DOS reference manual that comes with your DOS software.

If your application requires no parameters, or if you are uncertain, leave this option blank.

Initial Directory

If you have several directories, this option changes to a specific directory when the application starts.

Type the drive and directory you want MS-Windows to change to when you start the application. This directory is usually the location of the application's data files.

You can use the Initial Directory field and the Program Name field to make a customized PIF for applications shared on a file server. In the Program Name field, enter the drive and directory of the application. In the Initial Directory field, enter the drive and name of your personal directory. (Complete the other PIF fields as needed.) Make sure this customized PIF is in your personal directory.

When you select the customized PIF to run an application, MS-Windows copies the application from its drive and directory and starts it in your personal directory where the data files are. The application can then use the data files. When you close the application, the updated data files remain in your personal directory.

If the data files are in the same directory as the application, leave this option blank. In this case, MS-Windows does not change the directory when you start the application.

Memory Requirements

Two fields for Memory Requirements allocate memory for your applications:

- KB Required

  Type the minimum amount of memory required (in kilobytes) by your application.

  Memory requirements for your application should be in the application documentation.

  If you do not know how much memory is required, use the default setting of 52K bytes.

  If MS-Windows cannot provide the specified amount of memory, and if no application is running other than the MS-DOS Executive application, MS-Windows reduces its space requirements so that the application has room to operate. In this case, you cannot switch back to MS-Windows with the Alt/Tab keys; you must use the application's Exit command, or its equivalent, to return to MS-Windows.

- KB Desired

  Type the maximum amount of memory your application can use. Some applications run better if you assign more memory.

  The value entered in this field should at least equal the value entered in the KB Required field. If the application allocates memory, you should increase the value in the KB Desired field, and you may also need to increase the value in the KB Required field.

  If you enter zero (0), MS-Windows allocates all available MS-Windows memory to the application.

  If you leave this field blank, MS-Windows uses the default setting of 52K bytes.

> **CAUTION**
> Do not run the CHKDSK (Check Disk) utility program from MS-Windows; it can provide invalid messages about memory availability. If you select the /F qualifier of CHKDSK, you can destroy all data stored on your virtual disk.

Directly Modifies

Some applications use workstation resources such that applications cannot share them. Select any options that apply to your application:

- Screen

  Select this box if the application writes directly to the screen (video buffer) or if the application has a .BAT extension and uses redirected I/O. All standard applications that display graphics write directly to the screen.

  Selecting this option gives the application exclusive access to the full screen, rather than running it in a window. If you are uncertain, select this option.

- Keyboard

  Select this box if the application accesses the keyboard buffer. This buffer saves keystrokes until they can be processed.

Selecting this option prevents the application from running in a window (the application has exclusive access to the full screen) and prevents returning to MS-Windows with Alt/Tab. If you are uncertain, do not select this option.

- COM1

  Select this box if your application accesses serial communications port 1 (COM1). If you select this option, MS-Windows reserves COM1 for the application. When the application is running, MS-Windows cannot run any other application using COM1 until you stop running the first application. Generally, you select this option only if you are running a communications application.

  Selecting this option prevents two applications from trying to access the same communications port at the same time. Because only one application with the COM1 option selected can be running at a time, only one application attempts to access COM1.

  Selecting this option also prevents the application from being swapped to a disk. This type of application must remain in memory at all times.

- COM2

  Select this box if your application accesses serial communications port 2 (COM2). If you select this option, MS-Windows reserves COM2 for the application. When the application is running, MS-Windows cannot run any other application using COM2 until you stop running the first application. Generally, you select this option only if you are running a communications application.

  Selecting this option prevents two applications from trying to access the same communications port at the same time. Since only one application with the COM2 option selected can be running at a time, only one application attempts to access COM2.

  Selecting this option also prevents the application from being swapped to a disk. This type of application can remain in memory at all times.

- Memory

  Select this box only if your application loads and remains resident (using a Terminate and Stay Resident system call). Many pop-up applications do this. These applications generally load and remain in memory, and are activated while other applications are running. Generally, this type of application must be loaded before MS-Windows. In this case, you do not need a PIF for the application. If you are uncertain, do not select this option.

Program Switch

If your application uses the entire screen, these options determine whether you can switch back to MS-Windows with Alt/Tab. If you are uncertain which option to select, select Text.

- Prevent

  Select this option to conserve memory for the application, or if you find that the application does not switch to MS-Windows correctly. Selecting this option means you can stop running the application only by executing its Exit command, or the equivalent command, to return to MS-Windows. You cannot use the Alt/Tab procedure to return to MS-Windows.

- Text

  Select this option if your application works in text mode only, or if it runs in text and graphics modes, and you want to conserve memory. When you select this option, MS-Windows reserves 4K bytes to save the screen.

  If you select this option, you can switch back to MS-Windows only when your application is in text mode. If the application is in graphics mode, MS-Windows beeps when you press the Alt/Tab keys, to let you know it is not a valid action; you must use the Exit command of the application to return to MS-Windows.

- Graphics/Multiple Text

  Select this option if your application works in graphics mode. If you select this option, MS-Windows allocates extra memory (64K bytes) for you to switch back to MS-Windows when the application is in text or graphics mode.

  Due to extensive memory requirements, program switching is not supported for applications using IBM EGA high-resolution color modes.

Screen Exchange

These options let you specify the kind of data exchange between applications that require exclusive access to the screen.

You press Alt/Prt Sc to copy information into the Clipboard. This requires MS-Windows to allocate memory to save the screen image in the Clipboard. Text screens generally do not require much memory (2K bytes). However, graphics screens can require up to 64K bytes of memory. You should select options with this in mind.

If you are uncertain which option to select, select Text.

- None

  Select this option to prevent screen exchange and conserve memory.

- Text

  Select this option to allocate memory to copy text screens. If your application runs in a window, you can select this option.

- Graphics/Text

  Select this option to allocate memory to copy text and graphics screens.

Close Window On Exit

Select this option to close the standard application window when you use the application's Exit command, or its equivalent.

When you exit from some standard applications, they display information in the window for you to look at or copy. Do not select this option, because the window closes automatically, and the information is not displayed on the screen long enough for you to read it.

Using Default Settings

If you run an application, and MS-Windows cannot find a PIF, MS-Windows uses the following settings:

- Program Title: The application file name is displayed in the title bar.
- Initial Directory: You stay in your current directory.
- Memory Required: 52K bytes
- Memory Desired: All available memory
- Directly Modifies: Screen
- Program Switch: Prevent
- Screen Exchange: Text

Deciding What to Put in a PIF

How an application is displayed on the screen depends on:

- How the application uses workstation resources and hardware
- How the application is configured
- The amount of memory reserved for the application

If MS-Windows cannot run a standard application in a window, it runs the application outside a window, and the application uses the entire screen.

Use the following guidelines to help determine whether your standard application can run in a window:

- Does the application write directly to the screen (video buffer)?

  Many standard applications write directly to the screen instead of using DOS or other system conventions to display information (such as ANSI calls). These applications cannot run in a window. You must select the Directly Modifies screen option if your application writes to the screen.

- Does the application display graphics?

  Standard applications that display bit-mapped graphics (not character-based) write directly to the screen and cannot run in a window.

- Does the application provide an installation option for running under different screen conventions?

  Standard applications that support ANSI screen drivers can run in a window.

- How much memory does the application require?

  If the memory requirements of the standard application and MS-Windows together exceed the amount of available memory, the application cannot run in a window. MS-Windows "steps aside" and gives the application the maximum amount of memory available.

- Does the application use the alarm?

  Applications that use the alarm function of the real-time clock must run outside MS-Windows. At the minimum, you should select the Directly Modifies keyboard option.

  For standard applications that run in a window, MS-Windows does not support the following ANSI escape sequences:

  — Cursor Position Report

  — Set Mode

  — Keyboard Reassignment

  — Set Graphics Renditions subsets:

  Faint on
  Italic on
  Rapid blink on
  Subscript
  Superscript

  Select the Directly Modifies screen option in the PIF for any application that uses these.

To experiment, run the application without setting the Directly Modifies screen option. If the application writes information outside its window, or you see unexpected results on the screen, edit the PIF and select the Directly Modifies screen option.

Changing PIFs

Generally, you do not have to change the information in the PIFs. However, to change any parameters for a particular application by editing a PIF, you can tailor the performance characteristics of its application.

For example, to give Lotus 1-2-3 the maximum amount of available memory in your workstation, change the amount in the KB Required and KB Desired options to 640K bytes and select None for the Screen Exchange option and Prevent for the Program Switch option. Close all other applications except for the MS-DOS Executive, then run the application.

Some applications provide an option to install and run the application with an ANSI device driver (ANSI.SYS). If the application offers this option, you can usually run it in a window.

Since the application can now run in a window, you must alter the PIF. You should cancel the Directly Modifies Screen option. (Do this for all related .COM or .EXE files included in the application.)

If you run an application, and it does not load properly or is not operating as expected, check your PIF settings. You may need to increase the memory requirements of the application.

Giving Applications More Memory

When you run a standard application, MS-Windows allocates memory based on the settings in the PIF of the application. MS-Windows allocates memory for screen exchange (copying the screen) and for program switching (switching between the application and MS-Windows).

You can reduce the memory requirements for an application by selecting options that require less memory:

- The Screen Exchange Text option
- The Screen Exchange None and the Program Switch Prevent options

To give an application the maximum amount of memory:

- Change the amount in the KB Required and the KB Desired boxes in the PIF to 640K bytes. MS-Windows steps aside to free up all available memory for the application.
- Select the Prevent option for Program Switch.
- Select the None option for Screen Exchange.
- Save the modified PIF.
- Close all other applications except the MS-DOS Executive.
- Run the application.

Appendix C
The MS-Windows Setup Utility

This appendix discusses:

- Nonstandard hardware options
- MS-Windows Setup utility

Nonstandard Hardware Options

The workstation software installed on a server allows you to use MS-Windows with the VAXmate workstation hardware by default. The standard workstation hardware for a VAXmate includes:

- DIGITAL graphics display
- DIGITAL mouse
- DIGITAL United States keyboard

To use MS-Windows with nonstandard hardware options, (for example, a French keyboard or a Logitech mouse; a PC workstation with a VAXmate keyboard), you must create a version of MS-Windows for each nonstandard hardware configuration.

The MS-Windows Setup Utility

The MS-Windows Setup utility creates a version of MS-Windows for the hardware configuration that you specify. You select a specific hardware option for:

- A country keyboard
- A pointing device
- A graphic display adapter

NOTE

You must use the Setup utility and create the new version of MS-Windows before you configure the nonstandard workstation.

To use the Setup utility:

1. From your workstation insert the system administrator's key diskette into drive A and turn on (or reset) the workstation.
2. Be sure MS-Windows is running and the MS-DOS Executive window is displayed.
3. Change to the \WIN\DRV directory on the system source drive (drive L by default). Be sure the system source drive contains the correct software for the workstation you are configuring. For example, to configure a PC workstation when your default system source drive contains VAXmate workstation software, connect another drive to the PC workstation software and change to the \WIN\DRV directory on this drive.

4. Double-click on the "SETUP.EXE" in the directory list.

   MS-Windows displays the Setup utility main screen. Press C to continue.

   NOTE
   To run the Setup utility from the MS-DOS operating system, change to the \WIN\DRV directory and type:

   SETUP Return

5. Specify a directory to contain the nonstandard version of MS-Windows for the specified hardware configuration. The directory must be a subdirectory of the \WIN directory. The directory name should reflect the hardware configuration to be used with the new version of MS-Windows. If the directory you specify does not exist, the Setup utility creates it.

   NOTE
   Copy all files in the .DRV directories to the directory you create; otherwise, the Setup utility may not allow you to continue.

   It is recommended that you name the directory in the form **kkmmdd**.

   Where:

   kk — Is an abbreviation for the DIGITAL keyboard. Table C-1 lists the abbreviations and the keyboard for both the VAXmate workstations and the PC workstations.

   mm — Is an abbreviation for the pointing device. Table C-2 lists the abbreviations, the device names, and the workstation for which the device is available.

   dd — Is the abbreviation for the graphics display adapter. Table C-3 lists the abbreviations, the adapter names, and the workstation for which the adapter is available.

Table C-1: Industry Standard Keyboards

Abbrev.	Keyboard
US	United States
UK	United Kingdom
FR	French
DE	German
IT	Italian
ES	Spanish
SF	Swiss French
SD	Swiss German
CA	Canadian
DK	Danish
FI	Finnish
NO	Norwegian
SE	Swedish
AT	AT & T 6300 or 6300 PLUS
BE	Belgian
LA	Latin American
PO	Portuguese

Table C–2: Pointing Devices

Abbrev.	Device Name
DM	DIGITAL mouse
MS	Microsoft mouse
LT	Logitech mouse
NO	No mouse
M1	Mouse systems or VisiOn mouse (COM1:)
M2	Mouse systems or VisiOn mouse (COM2:)
JM	Kraft Joystick mouse
FD	FTG Data Systems Light Pen and Single Pixel Board
LP	Lite-Pen Company Light Pen
AM	AT & T Mouse 6300

Table C–3: Graphics Display Adapters

Abbrev.	Graphics Adapter
DM	DIGITAL Graphics Driver
CG	IBM Color Graphics Adapter
HE	Hercules Card with monochrome display
EM	EGA with Monochrome Personal Computer Display
EW	EGA with Enhanced Color Display (B&W only)
EC	EGA with Enhanced Color Display or IBM Color Display
EX	EGA (more than 64K) with Enhanced Color Display
AT	AT & T Display Enhancement Board
AP	AT & T PC 6300 or PC 6300 PLUS Display Adapter

Type the name of the directory and press the Return key. For example, if a PC workstation has an IBM Color Graphics Adapter, a Logitech mouse, and a DIGITAL United States keyboard, create a directory called CGLTUS.

6. The Setup utility displays a menu for each of the three types of hardware options. Select the hardware option from the menu and press the Return key.

   NOTE

   For PC workstations that are not VAXmates, you are asked whether you have a DIGITAL keyboard before the keyboard menu is displayed.

   If the workstation has the standard option for one of the three types of hardware, press the Return key to select the standard option, which is the default.

   The Setup utility builds MS-Windows with the hardware device drivers and copies it to the directory you specified.

7. The Setup utility asks which video mode it should set for the screen; normal video, which is dark characters on a light background, or reverse video, which is light characters on a dark background.

   When the Setup utility is complete, it tells you that MS-Windows is setup for the workstation.

   When you configure the workstation, you must specify to the Configuration Aide the directory you created fore the "MS-Windows Directory."

Appendix D
Using a Keyboard with the VT220 Emulator

This appendix covers in table format the keys that can be used with the VT220 emulator. It is assumed that you know:

- How to use MS-Windows keyboard techniques
- The purpose of the actions you want to take as explained in the VT220 emulator chapters

Table D-1 lists the keys used with the VT220 emulator and their functions.

> **NOTE**
> To access and use the arrow keys with the VT220 emulator you must press the Alt/spacebar keys. The first time you press this key combination, you get the Set-up System menu. To access the arrow keys, type this key combination a second time.

Table D–1: Keys and Their VT220 Emulator Functions

Key	VT220 Emulator Function Key
Alt/right arrow Alt/left arrow	When used after pressing Alt/spacebar, it moves the highlight right or left to the next Set-Up settings.
Alt/spacebar	The first time you use this key combination, you get the Set-Up System menu. To access the arrow keys, type the key combination a second time.
Alt/up arrow Alt/down arrow	Moves the highlight up or down within a Set-Up drop-down menu.
Next	Used in Set-Up to display the next Set-Up screen from the menu at the top of the screen.
Prev	Used in Set-Up to display the previous Set-Up screen from the menu at the top of the screen.
Right arrow Left arrow	Moves the cursor right or left in the tab column display.
F3 (Set-Up)	Enters or exits Set-Up.
Enter	Sets or resets a tab stop in Set-Up.

Appendix E
Non-Displayable Characters

This appendix lists the non-displayable characters for scripting. Nonprintable characters are represented as:

Carriage Return	<CR>, <RET>, or <RETURN>
Escape	<ESC>
Form Feed	<FF>
Line Feed	<LF>
Tab	<TAB>
Delete	<DEL>

Control characters are represented as follows:

Control A	<CTRL/A>
Control B	<CTRL/B>
.	
.	
.	
Control Z	<CTRL/Z>

Function keys are represented as:

F6	<F6>
F7	<F7>
.	
.	
.	
F20	<F20>

PF1 through PF4 are represented as:

PF1	<PF1>
PF2	<PF2>
PF3	<PF3>
PF4	<PF4>

Any number within angle brackets, (< >), converts to its DEC MCS equivalent. For example, <103> converts to a lowercase g. Numbers between 0 and 255 are valid.

Appendix F
Special Key Actions for MS-Paint

This appendix describes how to use the Ctrl and Shift keys with the mouse to enhance or restrict some of MS-Paint's functions.

Using The Ctrl Key: Copying A Selection

To copy a selection with the Ctrl key:

1. Hold down the Ctrl key.
2. Drag the selection.

MS-Paint creates a copy of the selection; the original remains in place.

Using The Shift Key: Creating Multiple Copies

To make multiple copies with the Shift key:

1. Hold down the Shift key.
2. Drag a selection.

   MS-Paint makes copies of the selection where the mouse cursor was dragged.

Using The Shift Key: Scrolling A Zoomed-In Canvas

To scroll a zoomed-in canvas with the Shift key:

1. Hold down the Shift key in the zoomed-in drawing window.
2. Drag.

   MS-Paint scrolls the canvas.

Appendix G
Using MS-Paint with the Keyboard

This appendix describes how you can use the keyboard to:

- Select tools and shapes
- Draw lines and shapes
- Draw curves
- Draw polygons
- Use the fill tool
- Make selections
- Move selection
- Copy and move selections
- Make multiple copies of a selection
- Scroll
- Zoom in, zoom out, and erase by using the Return key

You must select the proper tool before performing the sequence.

Selecting Tools and Shapes

To select from the tools and shapes palette, press Tab/Shift/Tab.

To move the highlight and select a tool or shape, you can also hold down the Shift/Ctrl keys and press an arrow key.

Drawing Lines and Shapes

To draw with the Pencil, Line, Freehand Polygon, Brush, Air Brush, 3-D, and Shapes tools:

1. Hold down the spacebar.
2. Press an arrow key in the direction you want to draw.
3. Release the spacebar to finish drawing.

Drawing Curves

To draw a curve:

1. Hold down the spacebar.
2. Press an arrow key in the direction you want to draw.
3. Move the cursor to one side of the line, and press the spacebar to mark the peak of the curve.
4. Release the spacebar to draw the curve.

Drawing Polygons

To draw a polygon:

1. Mark each corner with the spacebar and the arrow keys.

   MS-Paint draws the lines, connecting each corner.
2. Press the Return key at the final corner to close the polygon.

Using the Fill Tool

To fill a shape:

1. Press an arrow key to move the cursor over the shape.
2. Press the spacebar.

   The interior is filled.

Making a Selection

To select an area of the canvas:

1. Hold down the spacebar.
2. Press the arrow keys to indicate the area to be selected.
3. Release the spacebar.

Moving a Selection

To move a selection:

1. Press an arrow key to move the cursor into the Selection Rectangle or netted area.
2. Hold down the spacebar.
3. Press an arrow key until the selection is moved where you want it.

Copying and Moving a Selection

To move a copy of a selection:

1. Hold down Ctrl/spacebar.
2. Press an arrow key.

Making Multiple Copies

To make multiple copies of a selection:

1. Hold down Shift/spacebar.
2. Press an arrow key to move the selection.

   Multiple copies are made where the arrow key moves.

Scrolling

To scroll the screen:

1. Hold down the spacebar.
2. Press an arrow key.

To scroll a zoomed-out canvas:

1. Hold down the spacebar.
2. Press an arrow key to move the outline of the drawing window.

   When you return to the regular drawing window, the outlined selection of canvas is displayed.

To scroll the canvas under a zoomed-in drawing window:

1. Hold down Shift/spacebar.

   The Scroll cursor replaces the Pencil cursor during the scrolling action.

2. To scroll the canvas, move the Scroll cursor by pressing the arrow keys.

Using the Return Key

You can use the Return key to zoom in, zoom out, and erase.

Zooming In To zoom in:

1. Select the Pencil tool.
2. Press the spacebar to mark the target area for editing.
3. Press the Return key to zoom in for editing.
4. Press the Return key again to return to the regular drawing window.

Zooming Out To zoom out:

1. Follow the procedures for scrolling and press the Return key.
2. Press the Return key again to return to the regular drawing window.

Erasing To erase the entire drawing window:

1. Select the Eraser tool.
2. Press the Return key.

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