Color Plot

SoftPC® User's Guide

HP 9000 Series 300/800 Computers

HP Part Number 98870-90011

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This manual printing date and part number indicate its current edition. The printing date will change when a new edition is printed. Minor changes may be made at reprint without changing the printing date. The manual part number will change when extensive changes are made.

Manual updates may be issued between editions to correct errors or document product changes. To ensure that you receive these updates or new editions, you should subscribe to the appropriate product support service. See your HP sales representative for details.

September 1989 ... Edition 1, SoftPC release 2.0.

October 1989 ... Update. This update includes missing man pages: cphd(1), mkhd(1), spc(1) and spcterm(1).

Contents

1

Using This Manual

This manual describes how to use the SoftPC, an emulated personal computer. The SoftPC lets you run DOS and its applications on Series 300 and 800 HP-UX systems without needing a separate, physical computer.

Prerequisites

The material in this manual assumes you worked through the *SoftPC Installation Guide,* which explains system requirements and how to install required software.

Getting Information

You need not read this manual sequentially. Use the table of contents and index to find topics. Then, turn to the indicated pages to get information. In most cases, the manual presents information in one or two-page modules so you can see all the information you need without turning a page.

While reading this manual (and using the SoftPC), you can get information about DOS commands in the *DOS 3.3 Reference Manual.*

When you use the SoftPC and have DOS running, you can get online information by entering the following command from the DOS prompt:

```
help Return
```

The facility provides an interface that lets you find information with little difficulty.

2

Using the SoftPC from X11

You can use the SoftPC from an X11 window or a terminal. This chapter explains how SoftPC works within an X11 window. Chapter 3 explains how to use the SoftPC from a terminal.

The material in this chapter assumes you have installed and configured the X11 software. In short, someone completed the tasks required for you to be looking at an X11 window.

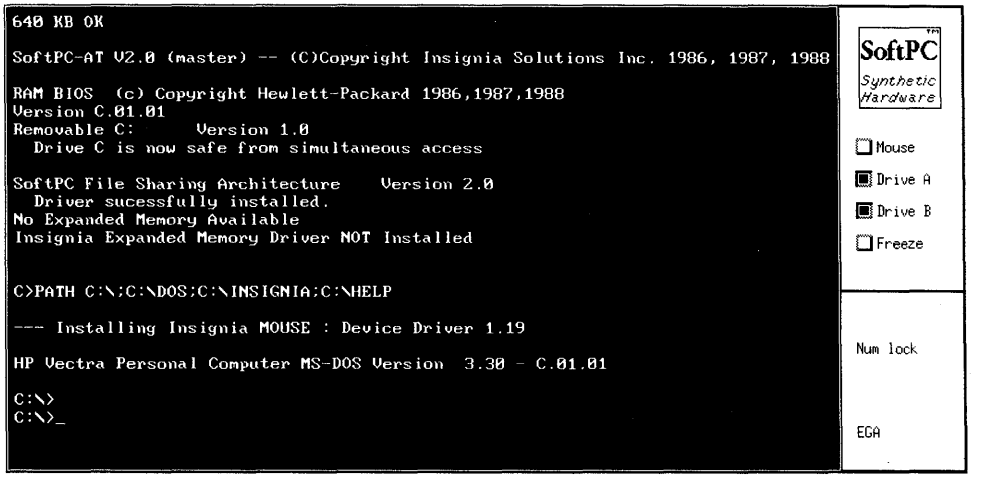
(If X11 was not installed for your system and you wish to use the SoftPC in an X11 window, have the system administrator for your HP-UX system make the window system available to you. That person knows which manuals to use. You can get introductory information by reading the *Using the X Window System* manual.)

Starting the SoftPC

1. From a X11 terminal window, type:

   spc & [Return]

2. If your mouse cursor changes to an upper-left corner indicator, move the cursor to the desired position and click the left mouse button.



Tips

See the spc(1) manual page for a full command-line synopsis and description of how to start SoftPC. Reference Information is included in Appendix B of this manual.

Using SoftPC Window Functions

To Do This ...	Try This ...
Attach the mouse to DOS	Click the left mouse button over the Mouse box. (To detach, click both buttons to pop up the Main Menu and select "Attach/Detach Mouse.")
Attach/detach Drive A	Click the left mouse button over the Drive A box.
Attach/detach Drive B	Click the left mouse button over the Drive B box.
Freeze/unfreeze the SoftPC	Click the left mouse button over the Freeze box.

Interpreting SoftPC Status

Mouse Box: Indicates whether the mouse is attached to DOS (filled box) or to the X windows system (empty box).

Drive A Box: Indicates whether a flexible disk drive (Drive A) is attached to the SoftPC (Filled box = attached).

Drive B Box: Indicates whether a flexible disk drive (Drive B) is attached to the SoftPC (Filled box = attached).

Freeze Box: Indicates whether the SoftPC is "frozen" (Filled box = frozen). A frozen state uses little processor time.

Caps Lock: Indicates whether caps lock is active (not shown in picture).

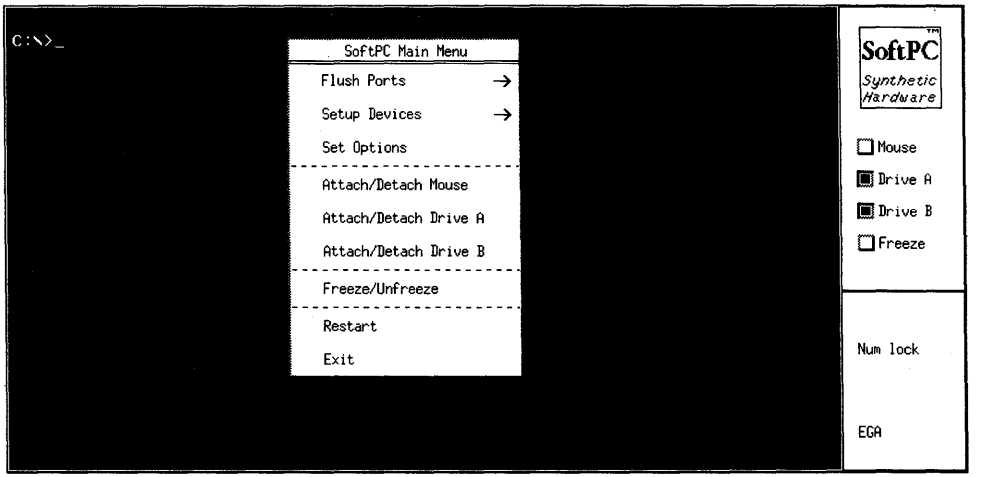
Num Lock: Indicates whether num lock is active.

Scroll Lock: Indicates whether scroll lock is active (not shown in picture).

EGA/Hercules/CGA: Indicates whether the SoftPC is emulating an EGA, Hercules or CGA display.

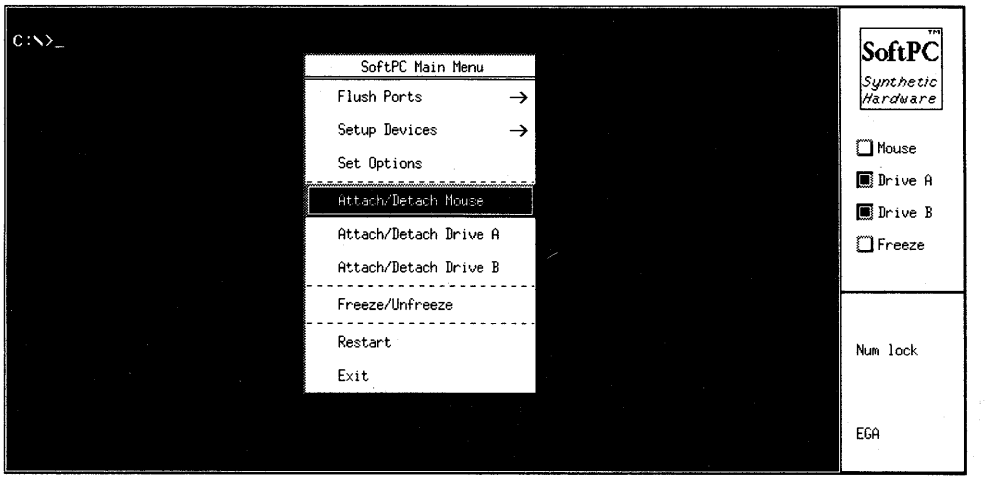
SoftPC Main Menu

The Main Menu is your entry point into the SoftPC.



To Do This ...	Try This ...
Pop up the Main Menu	Click both mouse buttons (2-button mouse) or the middle mouse button (3-button mouse) over the SoftPC window.
Select a menu item	Point to the desired menu item and click the left mouse button.
Pop up a secondary menu	Main Menu items that have secondary menus are indicated by a →. Move the mouse over the → and the secondary menu appears.
Remove the Main Menu	Point anywhere outside the Main Menu and click the left mouse button.

Attaching/Detaching the Mouse



To Do This ...	Try This ...
Attach the mouse to DOS	Click the left mouse button over the Mouse box on the SoftPC window, or Pop up the Main Menu and select "Attach/Detach Mouse."
Detach the mouse from DOS	Pop up the Main Menu and select "Attach/Detach Mouse."

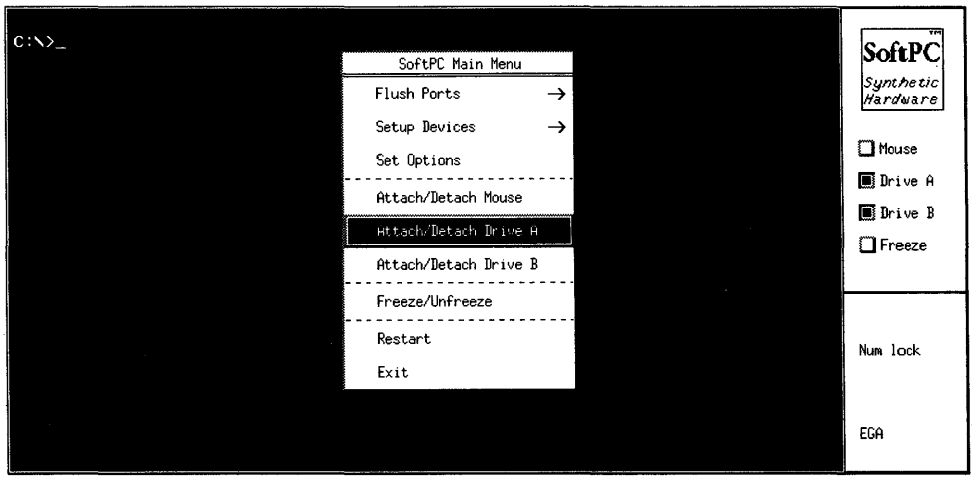
Tips

Attaching the mouse to DOS lets you use the mouse when running certain applications.

Not all applications use a mouse. If you attach the mouse while running such an application, the mouse pointer disappears. When this occurs, you can detach the mouse to solve the apparent problem.

While the mouse is attached to DOS, you cannot use the mouse to select X window menu functions.

Attaching Drive A or Drive B



To Do This ...	Try This ...
Attach or detach Drive A	Click the left mouse button over the Drive A box on the SoftPC window, or Pop up the Main Menu and select "Attach/Detach Drive A."
Attach or detach Drive B	Click the left mouse button over the Drive B box on the SoftPC window, or Pop up the Main Menu and select "Attach/Detach Drive B."

Tips

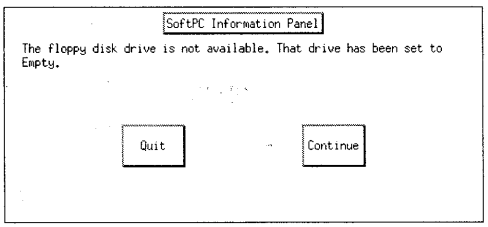
Remember that attaching drive A or drive B assumes that you have already configured the drive in the disk drive setup panel.

You can have up to two different flexible disk drives attached to SoftPC at once. For instance, you could have a HP 9127A 5.25-inch flexible disk drive attached to drive A and a HP 9122C 3.5-inch flexible disk drive attached to drive B. Another possibility, assuming you have a dual unit flexible disk drive, is to attach unit 0 to drive A and unit 1 to drive B.

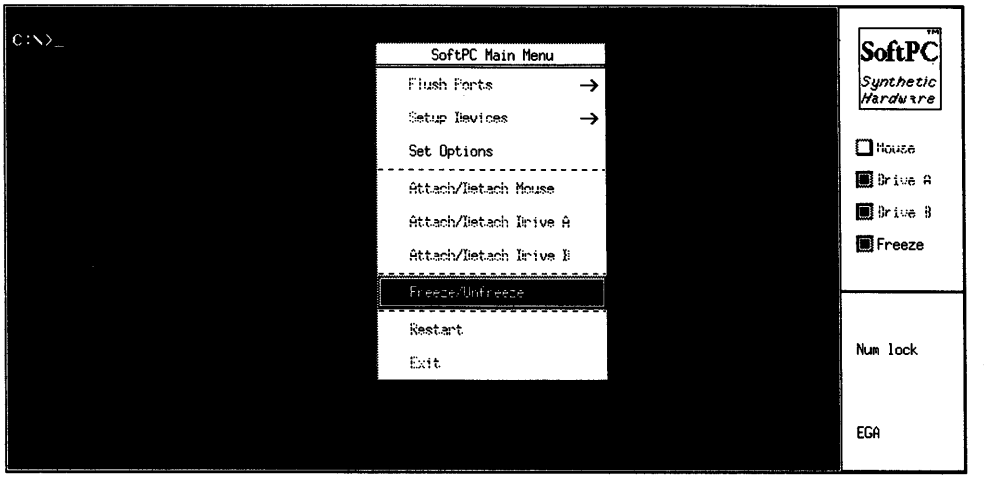
A flexible disk drive can be attached to only one SoftPC at a time. If you would like to share the same flexible disk drive between multiple SoftPC's or other SoftPC users, you should attach and detach the drive as needed to share.

If you try to attach a flexible disk drive that someone else is already using, you'll see a message similar to the one shown in the window below.

- Click on the Continue button if you want to resume work in DOS without the flexible disk drive.
- Click on the Quit button if you want to exit from the SoftPC.



Freezing the SoftPC



To Do This ...	Try This ...
Freeze or unfreeze the SoftPC	Click the left mouse button over the Freeze box on the SoftPC window, or Pop up the Main Menu and select "Freeze/Unfreeze."

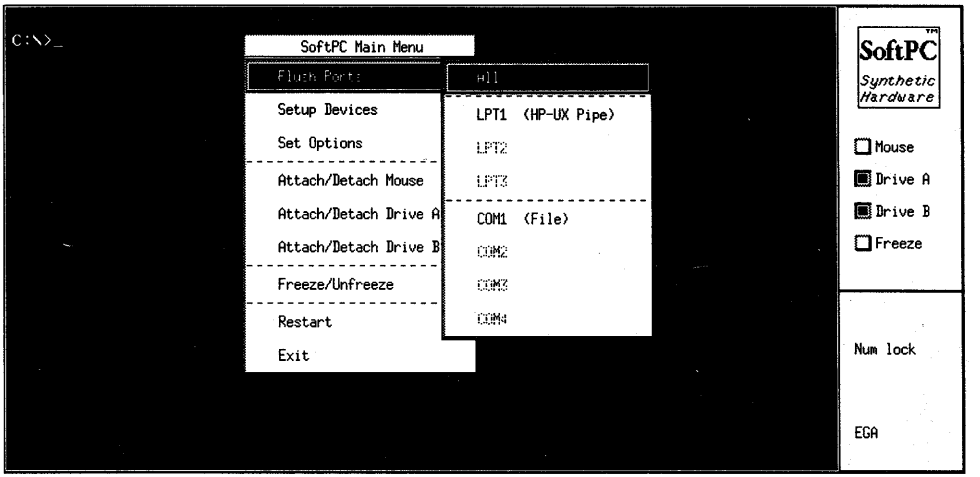
Tips

As a good practice, freeze the SoftPC when you are not using it. Your other HP-UX activities will run faster.

While the SoftPC is frozen, all Main Menu items except "Freeze/Unfreeze" will appear "grayed" or "dithered". You cannot select these items.

An alternative to freezing SoftPC manually is to use the automatic freeze option. See the section on Setting Options in this chapter for more information.

Flushing DOS Ports



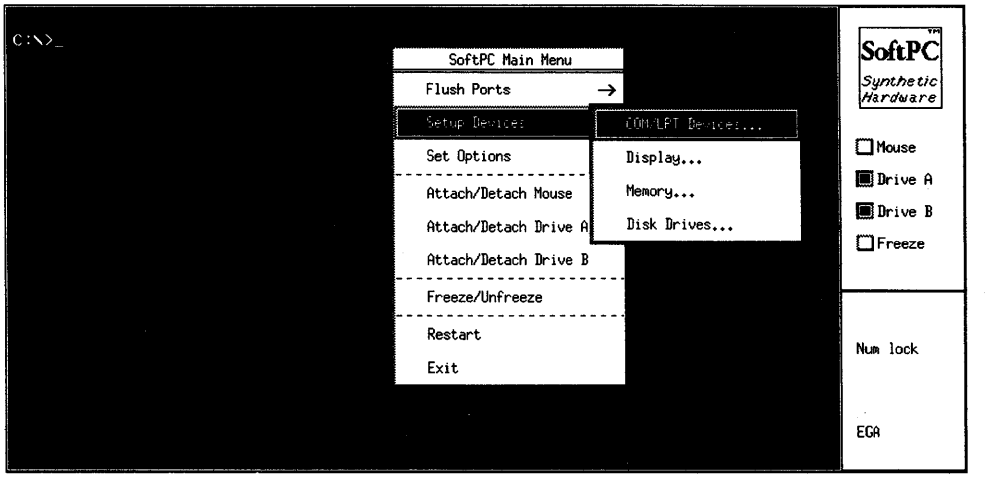
To Do This ...	Try This ...
Flush all ports	Pop up Main Menu; move the cursor over the → in "Flush Ports" to bring up the secondary menu; click the left mouse button over "All."
Flush one port	Pop up Main Menu; move the cursor over the → in "Flush Ports" to bring up the secondary menu; click the left mouse button over the port you want to flush. Ports with no device attached are "grayed" (unselectable).

Tips

Sometimes data sent to DOS devices is temporarily stored in a buffer. Flushing a port causes the buffer to be emptied and sent to the device. Use this feature after sending data to the HP-UX line printer spooler, or when only part (possibly none) of your data appears to have been sent to the device.

An alternative to flushing the ports manually is to use the automatic flush option. See the section on Setting Options in this chapter for more information.

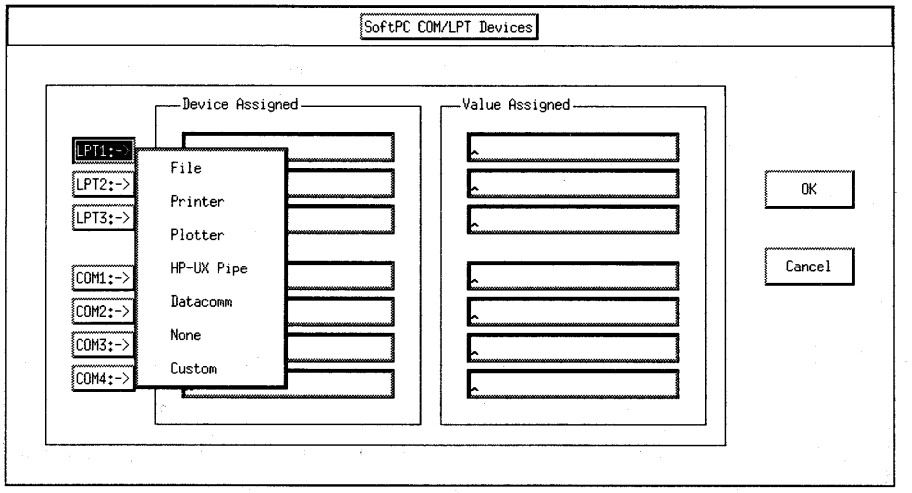
Setting Up Devices



To Do This ...	Try This ...
Select a device to set up	Pop up the Main Menu; move the cursor over the → in "Setup Devices" to pop up the secondary menu; click the left mouse button over the device type you want to set up.

The next several pages explain how to set up particular devices.

Setting Up COM/LPT Devices With Secondary Menu



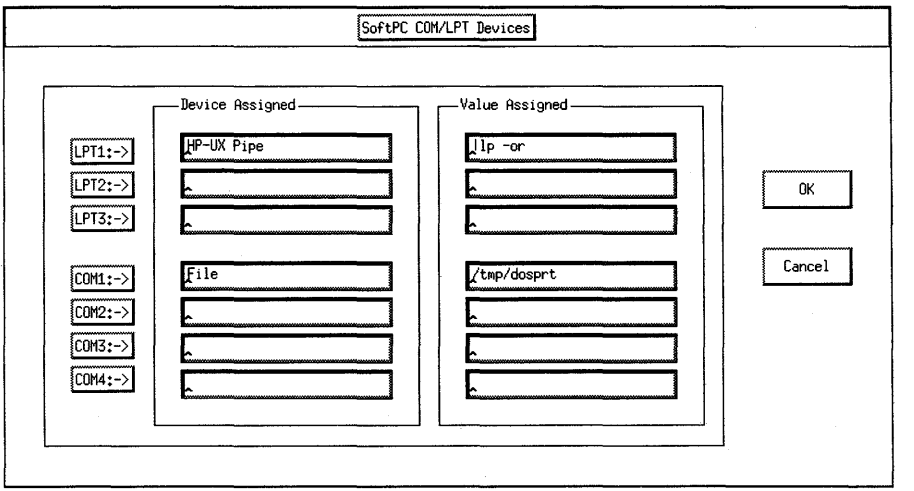
To Do This ...	Try This ...
Assign a device to a port	Move the cursor over desired port; click the left mouse button to pop up secondary menu; move the cursor to a device; and click the button to assign default values to the port.
Change the Device/Value Assigned	Move the cursor over box that you want to change; use the editing keys to make your correction; when finished editing, **do not press** Return; simply move the cursor out of box.
Clear a port assignment	Move the cursor over desired port; click the left mouse button to pop up the secondary menu; move the cursor to "None"; and click the button.
Save changes to port assignments	After making all changes, click the left mouse button over OK.
Discard changes to port assignments	Click the left mouse button over Cancel.

Types of Devices You Can Assign

File	Sends output to a specified file, which is created on drive E: if it does not exist. Output appends to the file if it already exists. The default assigned name is *dosprt* in the */tmp* directory.
Printer	Assigns an HP-UX printer to the port. Default value is the device file */dev/doslp*. If this device file does not exist, you may create it, or edit the "Value Assigned" to reflect the name of your existing printer device file.
Plotter	Assigns an HP-UX plotter to the port. Default value is the device file */dev/dosplt*. If this device file does not exist, you may create it, or edit the "Value Assigned" to reflect the name of your existing plotter device file.
HP-UX Pipe	Assigns an HP-UX pipe to the port. Default value is a pipe to the HP-UX line printer spooler.
Datacomm	Assigns a data communications connection to the port. Default value is */dev/dostty*. If this device file does not exist, you may create it, or edit the "Value Assigned" to reflect the name of your existing datacomm device file.
None	Clears the current device assigned.
Custom	Lets you create a custom entry. Not needed, since you can edit any of the entries directly.

An Example

The figure below shows sample assignments for an HP-UX Pipe and a File.



Tips

You can assign HP-UX devices to DOS ports, making them accessible to DOS and DOS applications. There are three parallel printer ports (LPT1—LPT3) and four serial communication ports (COM1—COM4) available for device assignment.

When assigning a device file to a port, you should have read and write permissions for the file.

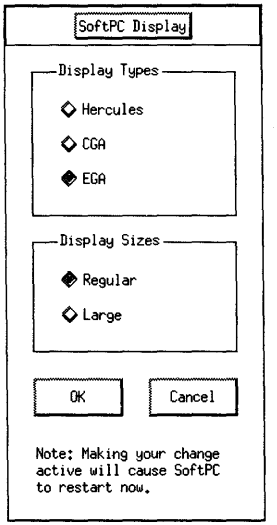
Assigning a device file that does not exist or without the proper permissions may cause a message to appear. Click the mouse over the Continue button to clear the port assignment, or click the mouse over the Quit button to exit from SoftPC.

When assigning a pipe to the lp spooler, the *-or* or *-oraw* option (printer-dependent) may be helpful.

The Device Assigned column indicates the device type only and may be omitted when making a port assignment.

Setting Up the Display

The following menu lets you select the display type and size.



Tips

Changing the display size only does not cause SoftPC to restart.

CGA and EGA are color graphics adapters.

Hercules is a monochrome alpha and graphics adapter.

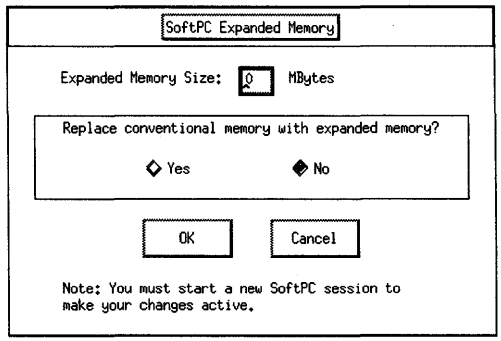
Using a large display size may slow down graphics updates but not greatly.

Using the Display

To Do This ...	Try This ...
Select a display type	Click the left mouse button over the diamond preceding the desired display type.
Select a display size	Click the left mouse button over the diamond preceding the desired display size.
Save changes to display type/size	Make sure you have saved your work—if you haven't select Cancel; otherwise, click the left mouse button over OK. The SoftPC will restart.
Discard changes to display type/size	Click the left mouse button over Cancel.

Changing the Default Memory

By default, you get 640 Kbytes of conventional memory. You may also specify the amount of expanded memory to be reserved by SoftPC. If you have an application which supports expanded memory and you would like to take advantage of this capability, use the following menu.



To Do This ...	Try This ...
Change expanded memory size	Move the cursor over Expanded Memory Size box and type in the desired value.
Replace conventional memory with expanded memory	Click the left mouse button over the Yes diamond.
Do not replace conventional memory with expanded memory	Click the left mouse button over the No diamond.
Save changes to memory	Click the left mouse button over OK.
Discard changes to Memory	Click the left mouse button over Cancel.

Tips

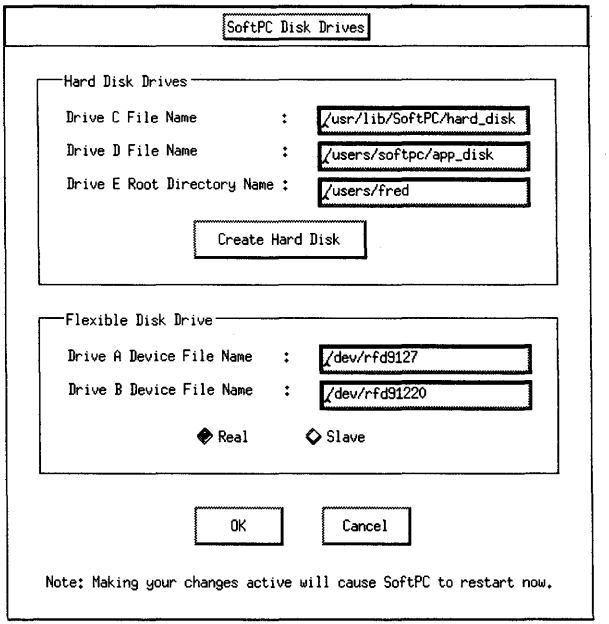
Expanded memory is based on the Lotus/Intel/Microsoft (LIM) Expanded Memory Specification (EMS 4.0).

You can choose from 0 to 8 Mbytes of expanded memory.

Replacing conventional memory with expanded memory causes memory "backfilling" from address range 256 Kbytes to 640 Kbytes.

It is recommended that expanded memory is not configured unless needed. Configuring more than 0 Mbytes of expanded memory will increase the amount of system memory that SoftPC uses on HP-UX.

Setting Up DOS Disk Drives



Tips

Drives C and D are emulated DOS hard disk drives of up to 32 Mbytes in size. *Reserve drive C for DOS only.* Drive D can accept copy-protected applications. Use drive D when an application will not install on drive E.

Drive E behaves like an ordinary DOS hard disk but is actually a "window" into the HP-UX file system. Use drive E to store your data files and to install most non-copy-protected applications.

Drives A and B allow you to access supported flexible disk drives installed on your HP-UX system.

A slave drive lets you access the flexible disk drive on an actual PC through a serial connection. To access a slave drive, you first need to establish the connection and run the SlavePC utility on the PC. See Chapter 4 for more information on the slave drive facility.

Using Disk Drives

To Do This ...	Try This ...
Change hard disk drive C: or D:	Move the cursor over the Drive C or D File Name box and type in the name and path for the new hard disk file.
Change the root directory of Drive E:	Move the cursor over the Drive E Root Directory Name box and type the HP-UX path you want to use.
Change the flexible disk drive A or B	Move the cursor over the Drive A or B Device File Name box and type the device file for the drive you want to use.
Select a Real/Slave drive A or B	Click the left mouse button over the Real or Slave diamond. (If you select a Slave drive, you must specify a tty device file for *Drive A Device File Name:* item in the *SoftPC Disk Drives* menu.)
Save changes to disk drives	After making all changes, click the left mouse button over OK.
Discard changes to disk drives	Click the left mouse button over Cancel.

Tips

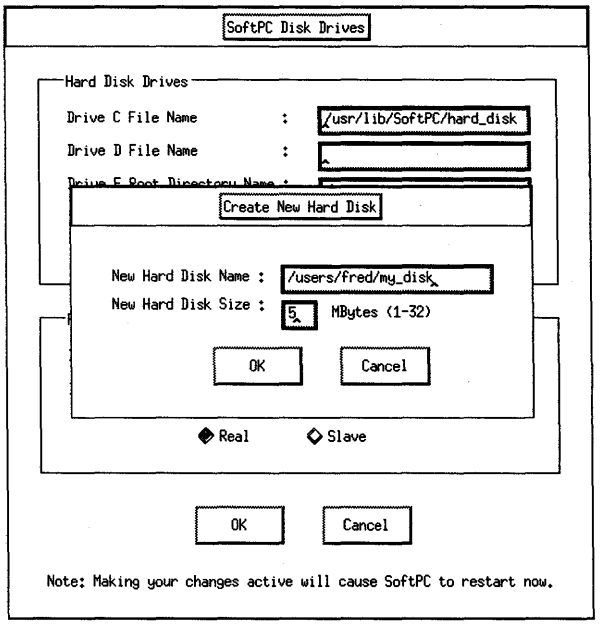
Changes to drive E do not cause SoftPC to restart; changes to other drives do cause a restart, so save your work first.

When specifying the file name for a disk drive, you should have read and write permissions on the file.

When configuring a flexible disk drive on a Series 300 computer, use a character special ("raw") device file.

When configuring a flexible disk drive on a Series 800 computer, use a diagnostic device file (usually located in */dev/diag/dsk*) and set up 0644 permissions on */dev/kmem*.

Creating a New Hard Disk



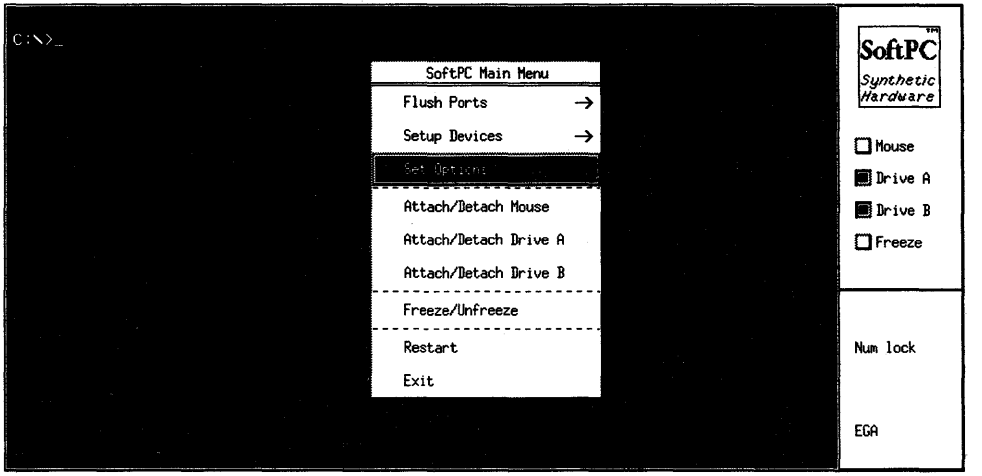
To Do This ...	Try This ...
Create a new hard disk file	Click the left mouse button over Create Hard Disk; move the cursor over New Hard Disk Name box and type the name and path you want to give to the new hard disk; move the cursor over the New Hard Disk Size box and type the size (in Mbytes) you want to give to the disk; select OK.
Cancel creation of the hard disk	Select Cancel.

Tips

After creating a hard disk, you may assign it to drive D.

To prepare the new hard disk for DOS, use the commands FDISK and FORMAT.

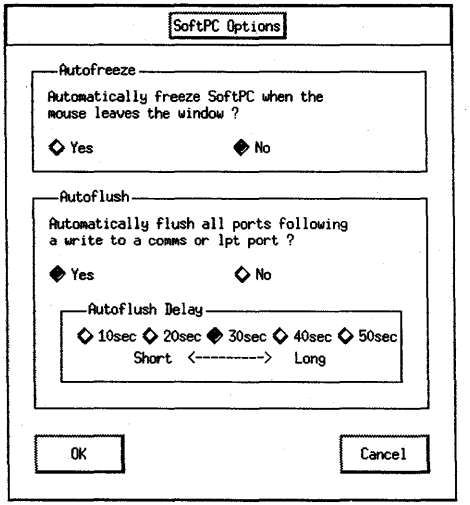
Setting Options



To DO This ...	Try This ...
Set Options	Pop up the Main Menu and select "Set Options".

The next page explains how to set the available SoftPC options.

Using Options



To DO This ...	Try This ...
Set Autofreeze option	Click the left mouse button over the diamond preceding the desired choice (Yes or No).
Set Autoflush option	Click the left mouse button over the diamond preceding the desired choice (Yes or No).
Set Autoflush delay	If you selected "Yes" for Autoflush, click the left mouse button over the diamond preceding the desired delay period.
Save changes to options	Click the left mouse button over OK.
Discard changes to options	Click the left mouse button over Cancel.

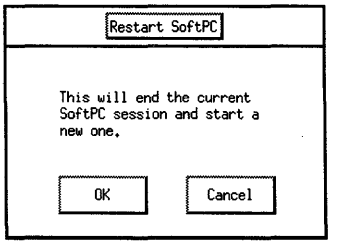
Tips

If Autofreeze is enabled, it will suspend DOS activity whenever the keyboard focus leaves the SoftPC window.

You should not need to use the Flush Ports main menu function when Autoflush is enabled.

Autoflush delay is the time period that SoftPC will wait following a write to a port before doing the automatic flush.

Restarting the SoftPC



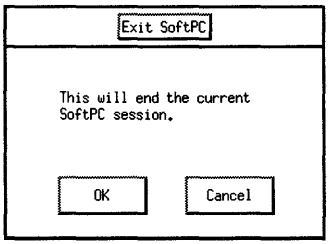
To Do This ...	Try This ...
Restart the SoftPC	Save your work and select Restart from the Main Menu.

Tip

You may also restart the SoftPC by pressing CTRL-Alt-DEL:

- CTRL is the CTRL key on your keyboard
- Alt is the left Extend char key on your keyboard
- DEL is the . key on your numeric keypad

Exiting the SoftPC



To Do This ...	Try This ...
Exit from the SoftPC	Save your work and select Exit from the Main Menu.

3

Using and Configuring the SoftPC on a Terminal

Chapter 2 described how to use the X11 version of the SoftPC. This chapter describes how to use the terminal version of the SoftPC, and to that end, the chapter has two purposes:

1. Initially, it explains how to configure a terminal so you can run the SoftPC. You need to be a system administrator to do some of the configuration. You can do most configuration as a normal user. (If you are not a system administrator and have little understanding of what a system administrator does, you may want the SA for your group to work through the configuration.)
2. Later, the chapter describes fundamental aspects of using and configuring the SoftPC. This includes such things as starting the SoftPC, using the keyboard and editing the *.SoftPC* file.

Using and configuring the SoftPC from a terminal assumes you have an appropriate HP-UX system and an installed terminal. You must have previously installed the software for the SoftPC. The *SoftPC Installation Manual* describes the process and lists appropriate hardware and software.

During the configuration, you may want to use the *System Administration Manual.*

Before Starting

You should be aware of some limitations that exist when running the SoftPC on a terminal. These limitations exist either because the terminal cannot support some features or the features exist only in the X11 version.

- You can use only selected terminals: HP 2392A, HP 2393A, HP 2394A, HP 2397A, HP 700/44, HP 700/92 and HP 700/94.
- You can use only Monochrome Display Adapter (MDA) applications. You cannot use CGA, EGA or Hercules applications.
- You cannot use a mouse.
- You cannot freeze the SoftPC.
- A menu-driven interface is not available for configuring the SoftPC. User configuration is accomplished by editing the *.SoftPC* file.
- You cannot access a slave drive using the SlavePC utility.
- You cannot use DOS code pages.
- You cannot use the DOS KEYB command on HP 239x and HP 700/9x terminals.

Configuring Your Terminal to Run SoftPC

This section explains how to configure your terminal so you can run the SoftPC. You should follow the steps necessary to meet the conditions explained in the sections named "The System Administrator Tasks" and "The User Tasks".

You may need the documentation for the terminal and the *HP-UX System Administrator* manual.

The System Administrator Tasks

1. Connect the terminal using RS-232 according to the documentation for the terminal.
2. Edit */etc/gettydefs* so it has the following lines:

   ```
   9600# B9600 HUPCL CS8 # B9600 SANE CS8 IXANY TAB3 #login: #4800
   4800# B4800 HUPCL CS8 # B4800 SANE CS8 IXANY TAB3 #login: #9600
   ```

   See the *gettydefs(4)* entry in the *HP-UX Reference* for more information on setting up the */etc/gettydefs* file.
3. Edit */etc/ttytype* to specify the terminal type and *ttyport.* If you have an HP 700/44 terminal, use *hp-pcterm* as the terminal type. For example, for an HP 700/44 terminal on */dev/tty00,* include:

   ```
   hp-pcterm   tty00
   ```

   See the *ttytype(4)* entry in the *HP-UX Reference* for more information on setting up the */etc/ttytype* file.

The User Tasks

Complete the following tasks according to your expertise (you can have the SA do them for you).

Setting Terminal Characteristics

Set the terminal characteristics according to your terminal in the following table.

Terminal	Baud Rate	Parity	Data Bits	Stop Bits	Xon/Xoff
239x	9600	None	8	1	Enabled
700/9x	9600	None	8	1	Enabled
700/44	4800	None	8	1	Disabled

Note Disabling Xon/Xoff and Enq/Ack pacing for the HP 700/44 is necessary because the start and stop characters used by the pacing schemes are identical to some of the IBM PC characters. Running at 4800 baud will help avoid pacing problems.

When you finish the tasks described up to this point, you should be able to login on your terminal. If you have a problem, do the following things:

1. Check the cable connections.
2. Check the datacomm parameters in:
    a. */etc/gettydefs* file
    b. terminal configuration
3. Use 512x390 resolution for the HP 2393A terminal.

Setting the TERM Parameter

Before running the SoftPC on a terminal, set the TERM environment variable so that it matches your terminal type.

If the */etc/ttytype* file is properly configured on your system, you may run the following:

```
eval 'tset -s -Q -h'
```

to initialize and set your TERM variable.

An alternative is to explicitly set your TERM variable as shown:

```
TERM=hp-pcterm
export TERM
eval 'tset -s -Q'
```

assuming you have an HP 700/44 terminal. (If you do not use the Bourne or Korn shell, take equivalent actions for your shell.)

If you have a HP 700/44 terminal, set the terminal type to *vt220* when doing regular work in HP-UX (i.e., when not running SoftPC).

Using the SoftPC on a Terminal

This section explains how to use the SoftPC on a terminal. Read the sections according to your needs.

Starting the SoftPC

1. Login as usual and check that the TERM environment variable matches your terminal type.
2. Type:

   `spcterm` [Return]

The SoftPC starts and the DOS prompt appears (`C:\>`). Then, you can use DOS or run its applications as usual.

See the *spcterm(1)* manual page for a full description of how to start SoftPC on a terminal. Reference Information is included in Appendix B of this manual.

Exiting the SoftPC

On HP 239x and HP 700/9x Terminals

1. Type [CTRL]-[N] (hold down [Ctrl] and type [N])
2. Type [ESC] followed by typing [1]
3. Then, press [Return] until your HP-UX prompt returns.

On the HP 700/44 Terminal

Press the [f12] function key.

Resetting the SoftPC

Type [Ctrl] [Alt] [DEL].

These keys are mapped on HP 239x and HP 700/9x terminals. See the *Using the Keyboard* section later in this chapter for a description of the keyboard mapping.

Flushing Ports

The following will flush all ports; you cannot flush particular ports.

On HP 239x and HP 700/9x Terminals

Type: [ctrl]-[N] [Esc] [2]

On the HP 700/44 Terminal

Type:

[Ctrl]-[Alt]-[Home]

as follows: right-hand [Ctrl] key; right-hand [Alt] key.

An alternative to flushing ports manually is to use the automatic flush option. See the section on *Configuring the SoftPC on a Terminal* in this chapter for more information.

Using the Keyboard

This section describes how to use the keyboard on your terminal. The extent to which you need to read this section depends on your terminal.

Using the HP 700/44 Terminal Keyboard

The HP 700/44 is a PC-compatible terminal and has a PC AT enhanced keyboard. The keyboard does not require any special key mappings for use on SoftPC; a keyboard overlay is not necessary. If you have an HP 700/44 terminal, you are ready to go to work.

Using the HP 239x and 700/9x Terminal Keyboards

These terminals do not have a conventional PC keyboard. Some of the terminal keys have been mapped in order to emulate a PC AT keyboard. Two keyboard overlays have been provided to help you remember how certain keys are mapped.

If you have an HP 239x terminal, the following overlays will work on your keyboard:

```
HP 239x Function Keys   Part Number 98870-84003

HP 239x Numeric Keypad  Part Number 98870-84004
```

If you have an HP 700/9x terminal, the following overlays will work on your keyboard:

```
HP 700/9x Function Keys   Part Number 98870-84005

HP 700/9x Numeric Keypad  Part Number 98870-84006
```

By placing the overlays on your keyboard, you can accommodate to the keyboard mapping over a short period of time. For reference, the table on the following page shows the keyboard mapping for the HP 239x and 700/9x terminals.

The following sections provide additional tips and describe special keys that are helpful when using HP 239x and HP 700/9x terminals.

PC Key	Terminal Key	Overlay Label
Ctrl	4 (numeric keypad)	Ctrl
Alt	5 (numeric keypad)	Alt
Shift	6 (numeric keypad)	L Shift
Shift	, (numeric keypad)	R Shift
BACK SPACE	Back space	-
BACK SPACE	0 (numeric keypad)	Back Space
Break	+ (numeric keypad)	Break/Scroll Lock
Caps lock	. (numeric keypad)	Caps Lock
DEL	Prev	-
End	1 (numeric keypad)	End
Enter	Return	-
ESC	* (numeric keypad)	ESC
F1	f1..f8	F1..F8
..F8		
F9	Clear line (HP 239x)	F9
F10	Clear display (HP 239x)	F10
F9	↖ (HP 700/9x)	F9
F10	Clear Line (HP 700/9x)	F10
↖	7 (numeric keypad)	Home
↖	↖ (HP 239x)	-
Ins	Next	-
Num lock	/ (numeric keypad)	Num Lock
Pg Dn	3 (numeric keypad)	Pg Dn
Pg Up	9 (numeric keypad)	Pg Up
Prt Sc	Shift-Enter (numeric keypad)	Prt Sc
ScrLck	+ (numeric keypad)	Break/Scroll Lock
Sys req	- (numeric keypad)	Sys Req
▲	▲	-
▼	▼	-
◄	◄	-
►	►	-

Do Not Use Certain Keys

Note that some keys do not function according to the key labels. In general, do not use the keys labeled [Ctrl] [ESC] [Shift] [Break] [Stop] and [Extend char]. The exception to this rule is when performing special operations such as exiting the SoftPC or flushing ports. In these situations, you will need to use the keys labeled [Ctrl] and [ESC].

Numlock Key

[Numlock] toggles the keypad between between its mapped mode and normal mode (which provides numerals). You can avoid problems by using the numeric keys above the alpha keys and keeping the numeric keypad in its mapped mode (out of numeric mode).

Screen Key

The HP 239x and HP 700/9x terminals have 24-line screens where PC screens typically have 25 lines. Since it is not possible to display all 25 lines on these terminals, the SoftPC displays the bottom 24 lines by default. Occasionally, you may need to see the top line. Use the [Screen] key ([2] on the numeric keypad) to get the 25th line. Pressing the key again will toggle the display.

Lock Key

The [Lock] key is useful when typing character sequences involving the [Ctrl], [Alt] or [Shift] keys. It essentially locks all subsequent keys down until released by pressing [Lock] again. For example, suppose you want to enter the PC key sequence:

[Ctrl] (press and hold) and then type [Alt]

to invoke a popular memory resident program. The necessary key sequence to accomplish this on an HP 239x or HP 700/9x terminal would be as follows:

1. Type [Lock] ([8] on the numeric keypad).
2. Type [Ctrl] ([4] on the numeric keypad).
3. Type [Alt] ([5] on the numeric keypad).
4. Type [Lock] again.

Configuring the SoftPC on a Terminal

This section explains how to set up devices and set options for the SoftPC.

Editing the .SoftPC File

To perform configuration tasks, you edit a file named *.SoftPC*. This file sets up the SoftPC each time you start a session. To edit *.SoftPC*, use *vi* or some other suitable editor that you prefer. The changes you make in *.SoftPC* take effect the next time you start up the SoftPC. Therefore, be sure to save them.

As shipped, the .SoftPC file in */usr/lib/SoftPC* contains the default user configuration. Since this is the system-wide default, try not to edit the *.SoftPC* file in */usr/lib/SoftPC*. Instead, copy SoftPC to your home directory. For example, if your home directory is */users/jaci*, execute:

```
cp /usr/lib/SoftPC/.SoftPC /users/jaci
```

If your system administrator does this for you, verify that you own your copy of the file and have read-write permission.

By editing your own .SoftPC file, you can customize the SoftPC according to your needs.

An Example of the .SoftPC File

To help you see the overall structure of the file, the facing page shows a representative, personalized *.SoftPC* file. Subsequent sections show parts of this file in relation to attaching drives, assigning ports, and so on.

```
HARD_DISK_FILENAME        /usr/lib/SoftPC/hard_disk
HARD_DISK_FILENAME2       /users/donna/app_disk
FLOPPY_DEVICE             /dev/rfd9127
FLOPPY_DEVICE2            /dev/rfd9122a
GRAPHICS_ADAPTOR          EGA
FILE_DEFAULT_VALUE        /tmp/dosprt
PRINTER_DEFAULT_VALUE     /dev/doslp
PLOTTER_DEFAULT_VALUE     /dev/dosplt
HPUX_PIPE_DEFAULT_VALUE   |lp -or
DATACOMM_DEFAULT_VALUE    /dev/dostty
COM_PORT_1_TYPE           datacomm
COM_PORT_2_TYPE
COM_PORT_3_TYPE
COM_PORT_4_TYPE
COM_PORT_1                /dev/ttyd01
COM_PORT_2
COM_PORT_3
COM_PORT_4
LPT_PORT_1_TYPE           HP-UX Pipe
LPT_PORT_2_TYPE
LPT_PORT_3_TYPE
LPT_PORT_1                |lp -dljet -oraw
LPT_PORT_2
LPT_PORT_3
FSA_DIRECTORY             /users/donna/dos
EXPANDED_MEMORY_SIZE      0
MEMORY_LIMIT              640
SLAVEPC_PORT
DISPLAY_SCALE_FACTOR      2
AUTO_FREEZE               0
AUTO_FLUSH                1
AUTO_FLUSH_DELAY          30
```

Subsequent sections explain each part of the file.

Attaching or Detaching Drive A and B

You may assign up to two different flexible disk drives to SoftPC, drive A and drive B. These are represented in your .SoftPC file as FLOPPY_DEVICE and FLOPPY_DEVICE2, respectively.

Edit the desired floppy device line to include the device file name of the flexible disk drive you want to use. For example:

```
FLOPPY_DEVICE    /dev/rfd9127
```

assigns drive A to an HP9127 disk drive. The drive becomes attached when you start a SoftPC session. It is detached when you end the session.

When several users have set a floppy device entry in their *.SoftPC* files that refer to the same flexible disk drive, the first user to start the SoftPC gets access to the drive. A second user cannot access the drive unless the first user exits the SoftPC and the second user starts the SoftPC. Because of this situation, it is recommended that you remove the floppy device entry in .SoftPC if you do not plan to use the flexible disk drive during the SoftPC session.

Setting Up Devices

Edit the lines for COM type, COM port, LPT port, and LPT type. The lines for type and port need to correspond. For the type, use one of: file, datacomm, printer, plotter, HP UX pipe, or none (See the section named "Types of Devices You Can Assign" in Chapter 2 for information about the types.) For example, you might have corresponding entries like:

```
COM_PORT_1_TYPE      datacomm
 ...
COM_PORT_1           /dev/tty0p5
 ...
LPT_PORT_2_TYPE     HP-UX Pipe
 ...
LPT_PORT_2           | lp -dlp2
 ...
```

Setting Up the Display

You cannot change the display on the terminal version. It defaults to Monochrome Display Adapter (MDA). The *GRAPHICS_ADAPTER* and DISPLAY_SCALE_FACTOR parameters in *.SoftPC* set the display type and size, but *spcterm* ignores these lines.

Setting Up Memory

Edit the *EXPANDED_MEMORY_SIZE* parameter. You can have increments of 1 Mbyte (range is 0 to 8). The *MEMORY_LIMIT* parameter can be 256 or 640. If you select the memory limit to be 256, it enables memory "backfilling" from address range 256 Kbytes to 640 Kbytes.

To set the conventional 640 Kbyte memory for DOS and no expanded memory, edit *.SoftPC* as follows:

```
EXPANDED_MEMORY_SIZE        0
MEMORY_LIMIT              640
```

Setting Drive File Names

Edit the *HARD_DISK_FILENAME, HARD_DISK_FILENAME2,* and *FSA_DIRECTORY* parameters to set the drive file names for drives C, D, and E, respectively. For example, you could include:

```
HARD_DISK_FILENAME        /usr/lib/SoftPC/hard_disk
HARD_DISK_FILENAME2       /users/donna/app_disk
FSA_DIRECTORY             /users/donna/dos
```

where drive C is the default hard disk, drive D is named *app_disk,* and drive E is named *dos.*

Drives C and D are emulated hard disk drives and should refer to file names. Drive E is a "window" into the HP-UX file system and should refer to a directory.

Setting the Autoflush Option

Edit the AUTO_FLUSH parameter to set this option. For example, you could include:

```
AUTO_FLUSH      1
```

to enable automatic flushing of ports. Setting the parameter to 0 will disable it.

If you enable Autoflush, you must set the AUTO_FLUSH_DELAY parameter. The acceptable values are 10, 20, 30, 40 and 50 in units of seconds. For example, you could include:

```
AUTO_FLUSH_DELAY      30
```

to make SoftPC wait 30 seconds following a write to a part before doing the flush.

Creating Hard Disks

To create a hard disk, use the HP-UX *mkhd* command. For example, you might use *mkhd* as follows:

```
mkhd /users/bill/my_aps_drive 20
```

which creates a hard disk file named *my_aps_drive* which is approximately 20 Mbytes in size.

When you create a new hard disk, you can assign it to drive D. Then, to make the disk operable, run FDISK and FORMAT as you would for any hard disk drive. (The *MS-DOS Reference Manual* describes these commands.)

See the *mkhd(1)* manual page for a full description of how to use the *mkhd* command. Reference information is included in Appendix B of this manual.

4

Using SoftPC Devices and Running Applications

This chapter provides information about using SoftPC devices and running applications on the SoftPC. The following table lists and describes the sections.

Section	Description
Getting to Know the SoftPC	Lists the features of the SoftPC.
Using SoftPC Components	Explains the components and describes how to use them: Displays, Keyboard, Memory, Flexible Disk Drives, Hard Disk Drives, LPT Devices, COM Devices, and Mouse.
Using Application Programs	Describes aspects of running applications on the SoftPC (for example, compatibility, memory, copy protection, accessibility, installation, and so on).

Getting to Know the SoftPC

The SoftPC system emulates the following PC AT components:

- An Intel 80286 processor (real mode only).
- An Intel 80287 numeric coprocessor.
- Three PC video adapters:
    1. Enhanced Graphics Adapter (EGA)
    2. Color Graphics Adapter (CGA)
    3. Hercules Graphics Adapter (supports MDA modes)
- An IBM PC AT keyboard.
- 640 Kbytes of standard system memory.
- From 0 to 8 Mbytes of Lotus/Intel/Microsoft (LIM) Expanded Memory Specification (EMS 4.0) memory.
- An IBM-compatible, 5.25-inch flexible disk drive (usually drive A:), provided you have an HP 9127A disk drive. All formats are supported except the high-density 1.2 MByte format.
- Another flexible disk drive (drive B:) which you can assign to a HP 3.5-inch flexible disk drive (e.g. HP 9122C) or to another HP 9127A. 720 Kbyte and 1.44 Mbyte formats are supported for 3.5-inch disks, depending on the capabilities of your disk drive.
- A hard disk drive, drive C:, (usually 2 Mbytes) pre-installed with DOS.
- An optional second hard disk drive, drive D:, as large as 32 Mbytes depending on the free space available on your HP-UX file system.
- Another hard disk drive, drive E:, which behaves, in most cases, like a DOS hard disk, but is in reality the HP-UX file system.
- Three Line Printer parallel interface ports, named LPT1 through LPT3.
- Four RS-232C Serial interface ports, named COM1 through COM4.
- A Microsoft BUS mouse, provided you have an HP-HIL mouse.

Using SoftPC Components

The following sections describe the components of the SoftPC.

Displays

The SoftPC system uses your HP 9000 display to emulate popular PC AT video adapters:

- The Enhanced Graphics Adapter (EGA) is an enhanced color graphics adapter available for PCs.
- The Color Graphics Adapter (CGA) is the standard color graphics adapter available for PCs. If you choose a CGA emulation, but have a monochrome monitor, CGA colors map into a dithered gray scale for graphics display.
- The Hercules Display Adapter is a popular product that provides monochrome alpha and graphics video for PCs. It is a functional superset of the standard Monochrome Display Adapter.
- The Monochrome Display Adapter is the standard, non-graphics monochrome display adapter available for PCs.

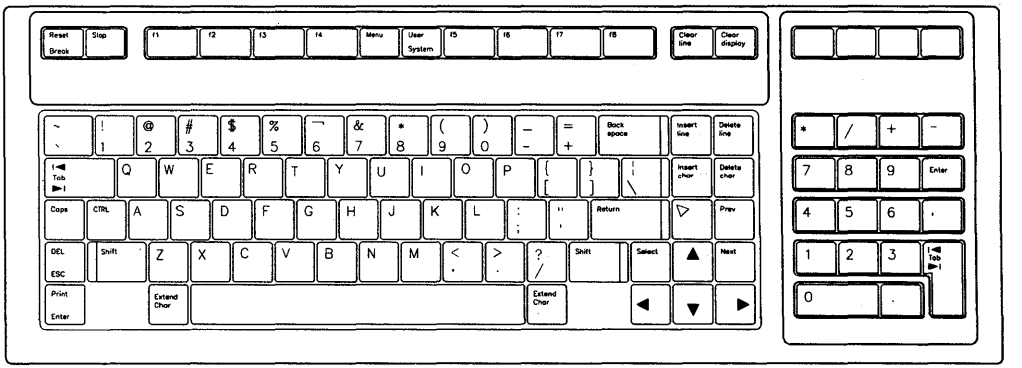
Note The Hercules emulation provides complete Monochrome Display Adapter functionality for those application programs that do not support Hercules.

When using the X11 version of the SoftPC, you can select the EGA, CGA or Hercules display types.

When using the terminal version of the SoftPC, you cannot change the display type. It is always MDA.

Keyboard

Your HP-HIL keyboard is used to emulate a PC AT keyboard. Two keyboard overlays can help you remember how certain keys are redefined. Place them on the keyboard as shown below:



You may have received more than one set of keyboard overlays with the SoftPC product. Which set you use depends on whether you use the X11 version or terminal version. If you use the X11 version of SoftPC, the following keyboard overlays will work on your HP-HIL keyboard:

`Console Function Keys`	Part number 98870-84001
`Console Numeric Keypad`	Part number 98870-84002

If you use the terminal version of SoftPC, see Chapter 3 for a description of the various terminal keyboards.

In most cases, you can accommodate to the keyboard mapping within a few days. For reference, the table on the following page shows the keyboard mapping for the X11 version.

IBM Key	Series 300/800 Key	Overlay Label
Alt	*left* Extend char	-
BACK SPACE	Back space	-
Break	Unlabeled	ScrLck/Break
Caps lock	Caps	-
DEL	. (numeric keypad)	DEL
DEL	Delete char	-
End	1 (numeric keypad)	End
Enter	Return	-
ESC	Unlabeled	ESC
ESC	ESC	-
F1..F8	f1..f8	F1..F8
F9	Clear line	F9
F10	Clear display	F10
↖	7 (numeric keypad)	Home
↖	↖	-
Ins	0 (numeric keypad)	Ins
Ins	Insert char	-
Num lock	Unlabeled	Num lock
Pg Dn	3 (numeric keypad)	Pg Dn
Pg Dn	Next	-
Pg Up	9 (numeric keypad)	Pg Up
Pg Up	Prev	-
Prt Sc	Shift-* (numeric keypad)	Prt Sc
Prt Sc	Shift-Enter	Prt Sc
ScrLck	Unlabeled	ScrLck/Break
Sys req	Unlabeled	Sys req
↑	8 (numeric keypad)	↑
↑	↑	-
↓	2 (numeric keypad)	↓
↓	↓	-
←	4 (numeric keypad)	←
←	←	-
→	6 (numeric keypad)	→
→	→	-

Memory

By default, you get 640 Kbytes of standard system memory (often called base or conventional memory). The amount of standard memory is not adjustable on SoftPC.

Expanded Memory

The Lotus/Intel/Microsoft (LIM) 4.0 Expanded Memory Specification (EMS) was developed to allow application programs to use more than the 640 Kbyte limit which MS-DOS can address. Applications which support expanded memory (e.g., Lotus 1-2-3, Version 2.0) use the extra space to hold very large data files, thereby increasing the performance and utility of the program.

Some application programs such as Ready! from Living Videotext can even execute out of expanded memory.

The SoftPC lets you allocate from 0 to 8 Mbytes of expanded memory in 1 Mbyte increments. You may also replace conventional memory with expanded memory, which causes memory "backfilling" from address range 256 Kbytes to 640 Kbytes. This is useful for some applications that support expanded memory.

It is recommended that expanded memory is configured only when needed. Configuring more than 0 Mbytes of expanded memory will increase the amount of system memory that SoftPC uses on HP-UX.

Flexible Disk Drives

A typical PC AT configuration includes one or two flexible disk drives, designated by DOS as drive A: and drive B:. An IBM-compatible flexible disk drive is a critical system component for application programs which rely upon a "key disk" copy-protection scheme. For other applications, a flexible disk drive is required only to install applications onto a hard disk, and for flexible disk backups of the application disks.

5.25-inch Flexible Disk Drives

When you installed the SoftPC software, you may have installed a HP 9127 5.25-inch flexible disk drive to emulate the PC AT's drive A:. You may use it whenever you install application programs onto your hard disk.

Aside from installing applications, the HP 9127 is not a required component of a SoftPC system. You may wish to retain the HP 9127 as your system's drive A:, or you may want to reassign drive A: to a 3.5-inch flexible disk drive. If your company has several SoftPC systems, the HP 9127 can be shared among them whenever software installation is required. However, this is not a feasible alternative if your application program requires a local 5.25-inch flexible disk drive for copy protection (e.g. Lotus 1-2-3 Version 1A).

A HP 9127 5.25-inch flexible disk drive is usually assigned to drive A: but may also be assigned to drive B:.

3.5-inch Flexible Disk Drives

If you have a 3.5-inch flexible disk drive (e.g. the flexible drive in a HP 9133 drive or a HP 9122 dual flexible drive), you may assign it to drive A: or drive B:.

Initialize support (ie. use of the DOS FORMAT command) may not be available with all of HP's 3.5-inch flexible disk drives. The following 3.5-inch flexible disk drives do have initialize support:

- HP 9122C disk drive
- HP 9153C disk drive
- HP 9153B disk drive

The following 3.5-inch flexible disk drives may **not** have initialize support but are available for reading and writing:

- HP 9122D disk drive
- HP 9122S disk drive
- HP 9133D disk drive
- HP 9133H disk drive
- HP 9133L disk drive
- HP 9153A disk drive

(On the Series 300 only) If the DOS FORMAT command fails to initialize a 3.5-inch flexible disk drive, try the following HP-UX command assuming the device file name */dev/rfd* has been given to the flexible disk drive:

```
dosmediainit -f 16 -i 2 /dev/rfd Return
```

If successful, retry the DOS FORMAT command.

Hard Disk Drives

The SoftPC includes two emulated hard disk drives (C: and D:) and provides access to the HP-UX file system via drive E:. All of these drives reside on your physical hard disk drive.

Drive C:

From the DOS perspective, drive C: is a hard disk having up to a 32 Mbyte capacity. In reality, drive C: is an HP-UX file named *hard_disk* (or some other name that you choose). The file contains DOS and system utilities. The intent is to share drive C: among users. Users wanting to install applications should use another emulated drive (D: or E:).

As shipped, SoftPC includes the file named *hard_disk* in */usr/lib/SoftPC,* which is the default drive C:.

Drive D:

Drive D: is similar to drive C: and has the following characteristics:

1. Drive D: can accept copy-protected application programs. Some programs achieve copy protection by "locking" themselves to a hard disk. They can be run only from the hard disk they were installed on. Programs that use this scheme can be installed on drive D:.
2. Drive D: can be shared among users, or individual users can keep a personal drive D: in their home directory.
3. You may choose the size of drive D: (1 to 32 Mbytes). By choosing a hard disk size with room for growth, you will avoid the problems associated with having to migrate to a larger hard disk at a later time.
4. SoftPC uses a sparse file structure for its hard disk drives. Running:

   ```
   ls l
   ```

   on your drive D: file, you'll see the size of the file is equal to the size of the hard disk you created. However, running:

   ```
   du -s
   ```

on your drive D: file, you'll see the actual disk space usage of your hard disk file which is probably less than the size of the hard disk you created.

5. Drive D: only gets bigger. Once the disk space is allocated, it cannot be freed. For this reason, you should only use drive D: to install applications that you intend to keep for a long time; you should not store application data files or other files that you intend to remove soon.
6. To retain the sparse file structure of a hard disk file, do the following:
    a. Use the *cphd* utility when copying the file.
    b. Use the HP-UX *mv* command when moving or renaming the file.

Using *cp* or copying the file via tape backup or network transfer commands will cause the new copy to be full size.

A new hard disk, e.g. drive D, can be created by using the *SoftPC Disk Drive* menu on the X11 version or by using the *mkhd* utility. When creating a new hard disk, you need to prepare it for DOS:

- Assign the new hard disk file as drive D.
- From DOS, run FDISK using the following steps:
    1. Select Next Fixed Disk Drive.
    2. Verify that Current Fixed Disk Drive = 2.
    3. Create DOS partition:
        a. Create primary DOS partition
        b. Select YES when asked "Do you wish to use the maximum size for a DOS partition?"
    4. Strike any key to reboot DOS.
- Run FORMAT D: /S and realize that the hidden system files are copied to the new disk for future migration purposes.

You can use one of the following methods to migrate to a new hard disk file:

1. Use drive C and drive D as follows:
    a. Select the old disk as drive C. This assumes that your old disk is bootable by DOS. It should have the two hidden system files, the command processor and either the XCOPY or COPY external commands.
    b. Create the new hard disk of the desired size, remembering to run FDISK and FORMAT on the hard disk before using it.
    c. Assign the new hard disk as drive D.
    d. Copy all files from the old disk (drive C) into the new disk (drive C) using either XCOPY or COPY.
    e. Re-assign drive C and drive D to the desired configuration.
2. Use drive E as a temporary storage area as follows:
    a. Copy all files from your hard disk (drive C or D) into drive E.
    b. Create the new hard disk of the desired size.
    c. Replace the old disk with your new disk.
    d. Copy all files from drive E into your new disk
    e. (Optional) Delete the old hard disk file
3. Use the HP-UX based DOS utilities as follows:
    a. Use *doscp* to copy one file at a time. Wildcards are not supported.
    b. Use *dosmkdir* to create directories, or put the required commands in a script.

You must have read-write permission to access a hard disk file from SoftPC. You cannot access a hard disk from SoftPC with just read-only permission. SoftPC obeys the standard HP-UX owner-group-others permission scheme for hard disk files.

Drive E:

Under most circumstances, drive E: behaves like an ordinary DOS hard disk drive. Use it to store your data files and to install most non-copy-protected application programs. Drive E: is also special in that it acts as a "window" through which DOS accesses the HP-UX file system.

Because drive E: is the HP-UX file system, you cannot perform certain operations on drive E:. For example, you would not want to FORMAT drive E:; if you did, you would wipe out all files on drive E:. The SoftPC prevents potentially dangerous acts by restricting the operation of certain DOS commands to drives other than E:.

Other compatibility issues arise, which fall into the category of DOS/HP-UX interaction:

- DOS uses the backslash character (\) to represent the root directory and to separate subdirectories in a pathname; HP-UX uses the forward slash (/) for this purpose. This is likely to trip you up a few times. If you type a command line and DOS comes back with the message:

  ```
  Invalid Parameter
  ```

  check to see that you used \ and not /. When in doubt, look at the DOS prompt.

- DOS only uses uppercase file names. HP-UX prefers lowercase, but allows either case.

- DOS limits file names to 8 characters plus a 3-character extension; HP-UX allows much longer file names.

- HP-UX and DOS text file formats are slightly different.

The last three items deserve a bit more attention.

DOS/HP-UX File Name Compatibility

The DOS Approach

The two DOS command processors supplied with the SoftPC—COMMAND.COM and PAM—convert everything you type into uppercase letters. You can type a command line in uppercase or a mixture of both; it will be converted to all uppercase.

This applies to file names also, so if you tell DOS to name a file *george,* it will perform a case conversion and name it *GEORGE.* Because of this, the file names *george, George* and *GEORGE* all refer to the same file: *GEORGE.*

DOS limits file names to 8 characters plus an optional extension consisting of a single period (.) and up to 3 characters. If you forget the DOS limitation on file name length, DOS will truncate the file name. For example, if you create a file called *filetoolong.bat,* the name will be truncated to 8 characters: *filetool.bat.*

The HP-UX Approach

HP-UX command processors pass on commands exactly as typed—the original case is preserved. Therefore, the file names *george, George,* and *GEORGE* all refer to different files.

Although HP-UX permits both cases, virtually all HP-UX system commands and system files are stored—and therefore must be typed—in lowercase. HP-UX users quickly become acclimated to typing in lowercase for almost everything, including their own file names.

File names can be very long on HP-UX. The limit is greater than the DOS limit of 8 characters. In addition, there is no limitation on file name extensions. HP-UX file names can have several periods (.) and/or any number of characters following a period. As a result, HP-UX users tend to choose their own convention for file name extensions.

The SoftPC Approach

Here we have two co-habitation operating systems with opposing case and file name length conventions. Yet, the SoftPC allows you to access both HP-UX and DOS file systems and must resolve case and length conflicts.

To do this, the SoftPC takes the following approach when creating files:

1. All DOS files stored on drive A:, drive B:, drive C:, and drive D: will receive uppercase file names, regardless of what you type. File names and extensions longer than the DOS limit are truncated. This is the standard DOS approach.
2. All DOS files stored on drive E. will receive lowercase file names, regardless of what you type. Note, however, that DOS directory listing of drive E: will show all uppercase tile names; HP-UX listings will show the actual, lowercase file names. Filenames and extensions longer than the DOS limit are truncated.

When retrieving files or when listing a directory, the SoftPC takes this approach:

- All DOS files stored on drive A:, drive B:, drive C: and drive D: have uppercase file names and lengths. Therefore, all files can be retrieved; you cannot create a file with DOS that cannot be retrieved.
- All DOS files stored on drive E: (the HP-UX file system) that have all lowercase file names and lengths within the DOS limits can be retrieved. Files with all upppercase names, mixed-case names or lengths exceeding the DOS limits can also be retrieved, but the HP-UX file name is mapped into a valid DOS file name.

If a file name contains all upppercase characters and proper length, the file can be retrieved without file name mapping provided that there is not a file with an equivalent all lowercase file name. For example, the HP-UX file *FRED.DAT* will appear as *FRED.DAT* when performing a DOS directory listing if there is not a HP-UX file called *fred.dat,* If there is a HP-UX file called *fred.dat,* the HP-UX file called *FRED.DAT* will be mapped.

When a HP-UX file name does not map directly into a valid DOS file name, SoftPC uses the following rules to perform file name mapping:

- If the first letter is a period, the period is deleted and the remainder of the file name is processed as below.
- The first 8 letters before the first period are preserved if they are valid DOS characters.
- Any lowercase characters are converted to uppercase.
- If a character is not valid, it is deleted.
- A DOS extension is generated, containing an internal code made up of valid DOS characters.

For example,

- *verylongfile* becomes *VERYLONG.xxx*
- *HELLO.1234* becomes *HELLO.xxx*
- *Ace* becomes *ACE.xxx*
- *.profile* becomes *PROFILE.xxx*

where *xxx* consists of valid DOS characters.

The SoftPC file name mapping makes it possible to access all HP-UX files with DOS. However, as a general rule when you intend to accesss files in both DOS and HP-UX, you should always type file names in lowercase and name them according to the DOS file naming conventions. This will make file access much easier.

DOS/HP-UX Text File Compatibility

Text files created with DOS editors and with HP-UX editors are not created equal. Consider this example.

How HP-UX Perceives DOS Files

Using EDLIN, you create a file named *dosfile.txt* containing the following lines:

```
This file was created with EDLIN.
It is in DOS format.
```

You store this file in drive E: so that HP-UX can access it, then you escape to HP-UX and use the *vi* editor to examine it. In *vi, dosfile.txt* looks like this:

```
This file was created in EDLIN.^M
It is in DOS format.^M
^Z

"dosfile.txt"[Incomplete last line] 3 lines, 56 characters.
```

Notice the control characters at the end of each line, and the control-Z that terminates the file. Also note the bottom line of the *vi* display, which indicates DOS created this file with an incomplete last line.

How DOS Perceives HP-UX Files

Now suppose you create a file with *vi* called *hpuxfile.txt* that contains the following lines:

```
This file was created in vi.
It is in HP-UX format.
```

Now you return to DOS and use EDLIN to examine this file. Here is what you see:

```
1:*This file was created in vi.
                                        2: It is in HP-UX format.
  3:
     *
```

DOS thinks HP-UX files look pretty odd as well.

Converting DOS/HP-UX File Formats

In order to easily use DOS to edit HP-UX files and vice versa, the SoftPC provides two commands which convert DOS format to HP-UX format, and HP-UX format to DOS format.

DOS2UX converts DOS files into a form HP-UX can easily read. For example, to convert *dosfile.txt* into HP-UX format, we could execute:

```
dos2ux dosfile.txt >hpuxtemp.txt [Return]
```

This creates a new file *hpuxtemp.txt* which contains the contents of *dosfile.txt,* but in HP-UX format. If we now use *vi* to edit *hpuxtemp.txt,* we see:

```
This file was created in EDLIN
It is in DOS format.

"hpuxtemp.txt" 2 lines, 53 characters.
```

Notice that the control charcters are gone and the message at the bottom complaining about an incomplete last line has disappeared.

To convert an HP-UX file into DOS format, use UX2DOS:

```
ux2dos hpuxfile.txt >dostemp.txt [Return]
```

Again, the newly-created DOS format file is stored in *dostemp.txt:* the original file is unchanged. If we now use EDLIN to edit *dostemp.txt,* we see a well-behaved file:

```
1:*This file was created in vi.
2: It is in HP-UX format.
3:
```

UX2DOS and DOS2UX can be executed both from DOS and HP-UX.

LPT Devices

DOS supports three parallel ports (LPT1, LPT2 and LPT3). On a PC, these ports are used to connect printers, plotters, and other similar devices. The SoftPC emulates these ports using standard HP-IB and RS-232 interfaces.

Parallel printer connections to the PC are normally made via a Centronics-compatible printer port, known as an LPT port. In a SoftPC system, output sent to LPT1 (for example) is routed to the printer assigned to LPT1. The printer may be connected to a HP-IB or RS-232 interface, for example:.

```
LPT1    /dev/doslp
```

In addition to connecting actual printers to the LPT ports with device files, you can also "connect" an ordinary HP-UX file. For example, if you include the following line:

```
LPT1    /tmp/dosprt
```

all data sent to LPT1 is "printed" in the file *dosprt* in the *\tmp* directory of drive E:.

You can also assign an HP-UX pipe to a port, as in this example which pipes LPT2 output to the HP-UX line printer spooler:

```
LPT2 |lp -or >/dev/null 2>&1
```

Setting LPT Port Printer Characteristics

You can control the vertical and horizontal spacing of an LPT printer with the following MODE command:

```
mode lptn:horz,vert,P
```

`lpt`*n*	The printer's port (LPT1, LPT2 or LPT3).
horz	The horizontal spacing (80 or 132) in characters/inch.
vert	The vertical spacing (6 or 8) in lines/inch.
`P`	Indicates the port is assigned to a printer.

The following example sets the printer assigned to LPT1 to 132 characters/inch horizontal spacing and 6 lines/inch vertical spacing.

```
mode lpt1:132,6,p
```

The *MS-DOS 3.3 Reference Manual* describes MODE.

COM Devices

The SoftPC uses your computer RS-232 interfaces to emulate PC RS-232C ports, COM1 through COM4. "Connections" are made via COM*n* as follows:

`COM1 /dev/tty`	Assigns a modem connected to a Series 300 RS-232 port to COM1.
`COM1 /dev/doslp`	Assigns a printer connected to a RS-232 port or an HP-IB interface to COM1 (e.g., *Laserjet Plus*).
`COM1 /tmp/dosprt`	Assigns the file *dosprt* in the HP-UX */tmp* directory to COM1. Data sent to COM1 is stored in the file.
`COM2 /dev/dosplt`	Assigns a plotter connected to a RS-232 port or an HP-IB interface to COM2.

Notice that not all of the devices you can *logically* connect to the COM ports are *physically* connected to computer RS-232 ports. The reason you assign HP-IB plotters to COM ports is because that is how these devices are normally connected to a PC, and application software generally expects to find these devices on serial ports.

Settting COM Port Communications Characteristics

Whenever you assign a device to a COM port, you can use the MODE command to set the port's communication characteristics to that of the device assigned to it.

For example, the *Laserjet* printer requires the following settings:

- 9600 baud
- No parity
- 8 data bits/character
- 1 stop bit/character
- The `P` option, which identifies the device as a printer.

If the *Laserjet* is assigned to COM1, the MODE command is:

```
mode com1:96,n,8,1,p
```

See the *MS-DOS 3.3 Reference Manual* for the details of MODE.

Rerouting LPT Port Output to a COM Port

Many application programs assume your printer is attached to LPT1. When you use a serial printer such as a *Laserjet,* you can reroute data sent to LPT1 to the COM port where your serial printer is connected. (In reality, it is probably better to reconfigure the ports.)

To do this, you use the MODE command:

```
mode lpt#:=com#
```

- *lpt#* is the LPT port to be rerouted.
- *com#* is the COM port that your printer is assigned to.

Example: `mode lpt1:=com1`

reroutes output sent to LPT1 to the printer assigned to COM1.

To automatically reroute LPT output each time you start DOS, include this MODE command in your *autoexec.bat* file.

Mouse

The SoftPC includes emulation software that allows your HP-HIL mouse to emulate a Microsoft BUS mouse in DOS application programs.

To use the mouse, you must:

1. Run the X11 version of SoftPC. (The terminal version does not support a mouse.)
2. Execute the MOUSE command to load the supporting software for the mouse. To do this, type:

   `C:\INSIGNIA\MOUSE` Return

   or include the MOUSE command in your *autoexec.bat* file to automatically load mouse support each time you start a DOS session.

The MOUSE command does not support any options.

Using Application Programs

One reason for using the SoftPC is to run "off the shelf" application programs designed to run on the IBM PC AT. While the SoftPC is compatible with PCs and runs most applications, some programs do not run because they have specific computer dependencies.

Is Your Application Program Compatible?

The answer is "Yes" when:

- It is compatible with an IBM PC AT.
- It is designed to run on DOS 3.3.
- The SoftPC emulates all of the required hardware components required by the application.

PC Compatibility

The SoftPC is compatible with PC AT versions of software. The documentation supplied with MS-DOS software should indicate supported models of the PC family.

Some MS-DOS application software takes advantage of specialized features that a manufacturer's AT-compatible provides. Such software executes only on the computer for which it is implemented and not on the PC AT. Consequently, such software is not compatible with the SoftPC. For example, HP's AdvanceWrite I, II, and III rely on features specific to HP's Vectra PC and are not compatible with the SoftPC.

DOS Compatibility

The SoftPC runs version 3.3 of MS-DOS. Applications that require another operating system such as XENIX are probably not compatible with the SoftPC.

Hardware Compatibility

For example, an application may require:

- An IBM PC, XT, AT or 100% compatible computer
- At least 256K of memory
- At least one 5.25-inch 360 Kbyte flexible disk drive
- A Monochrome Display Adapter (MDA), Color Graphics Adapter (CGA), Hercules Graphics Adapter (HGA), or Enhanced Graphics Adapter (EGA).

To determine if your application is compatible, compare the hardware requirements to the following list of hardware emulated in the SoftPC:

- Monochrome Display Adapter (MDA)
- Color Graphics Adapter (CGA)
- Hercules Graphics Adapter (HGA)
- Enhanced Graphics Adapter (EGA)
- Four RS-232 ports
- Three parallel printer ports
- Standard PC AT memory (NO extended memory)
- Expanded memory cards (LIM EMS 4.0 specification)
- Standard hard and flexible disk controller cards.

The SoftPC is compatible with most hardware available for the PC. Exceptions are usually easy to see; for example, PC networking applications requiring specialized LAN cards would not likely be compatible.

Compatibility Summary

The SoftPC was designed and tested to be very compatible with IBM PC applications. The final test is to try out a specific application. Some programs may be incompatible with the HP-UX file system access software (drive E), but operate correctly when run on the emulated hard disks (drive C or D); drive D is preferred.

Compatibility vs. Performance

While the SoftPC may be compatible, an application may perform slower than it does on a PC AT. Most differences should be acceptable. The following table lists and describes related factors.

Factor	Description
Type of Application	Some graphical, recreational applications that often update the screen may perform slowly.
Model of Computer	The model of your computer has the greatest effect on SoftPC performance. The more powerful your computer, the better the performance.
Computer Hardware Accessories	On a Series 300 computer, adding a High-speed Disk interface and a DMA card improves DOS hard disk I/O performance. A High-speed Disk interface provides the best performance improvement. The addition of a DMA card to the High-speed Disk interface further enhances performance.
Memory Size	The amount of memory in your computer can increase interactive HP-UX/DOS performance in window environments, and can improve drive E: access time.
Number and Type of Running HP-UX Processes	Like all HP-UX processes, SoftPC is affected by the number and type of processes that are running concurrently with it.

Copy-Protected Software

Flexible Disk Copy Protection

A popular method of copy protection involves tying the application directly to the flexible disk it is shipped on. These copy protection schemes depend on the hardware used by the flexible disk drive. To achieve true PC AT software compatibility, the drive used by the SoftPC must closely emulate the drive normally used in IBM PC AT operation. The HP 9127A is very compatible with IBM 360 Kbyte drives. Therefore, even applications using flexible disk copy protection schemes should be fully compatible with the SoftPC.

Hard Disk Locking

Another method of copy protection involves locking the application directly to the hard disk of a specific machine. Once this is done, these applications can only be executed on the machine they were installed on. Drive C: (and preferably drive D:) was implemented to be compatible with these copy protection methods.

Installing Applications

One decision you make when installing application programs is: Which drive should I store them on (drive D or E). As mentioned earlier, drive D: is your only choice if the application program uses a hard-disk locking scheme for copy protection. If your application program is not copy protected, you can store it on drive E:.

If you intend to keep all of your application programs for a long time, you can store them on drive D: without penalty. If, however, you delete an application from drive D:, the space is not reclaimed and part of your hard disks storage space is wasted.

For the same reason, you should not store data files and other volatile information on drive D:. Use drive E: for this purpose.

Once you have decided to store your program on a certain drive, follow the instructions in the application program's manual to install the program. If the manual includes instructions for formatting the hard disk and for copying MS-DOS to the hard disk, you can ignore them for drive C—this has already been done for you. However drive D is not pre-formatted when created. You must run FDISK and FORMAT on it. Follow the instructions for creating application directories and for transferring program files from the flexible disks onto the hard disk.

Configuring Applications to the SoftPC

Many application programs let you configure them to the individual characteristics of your computer. For example, a graphics program may ask which port your plotter is connected to; a word processor may ask about where you have stored its spelling checker's dictionary file; a program may ask what type of monitor you have so it can present its displays properly.

These configuration questions are designed for PC AT computer systems. Since your PC AT is emulated, you may be unsure how to answer these questions. A few guidelines are presented in the following sections.

Video

A program may ask what type of display adapter you're using, whether or not you have a color display, the dimensions of your screen, how many displays are installed, and so on.

Type of Display?

The X11 version of the SoftPC emulates an EGA, CGA or Hercules display, which you can specify. The Hercules adapter supports MDA modes. The terminal version uses only MDA.

Look at the right border of the SoftPC window. Seeing `EGA` means you have an EGA monitor. Seeing `CGA` means you have a CGA monitor. Seeing `Hercules` means you have a Hercules/MDA monitor.

Color or No Color?

You can specify color if you have a color monitor. But color can slow down program execution, so you may want to select the Hercules display and tell a program you do not have color.

If you tell a program you have color when you have a monochrome monitor, graphics colors map into a dithered grey scale.

Display Performance?

Some applications ask a question similar to "Does your screen blink when text scrolls?" in order to determine performance characteristics of your display and adapter. Always answer this question with No, to eliminate performance degradation.

Device Location

Some applications ask you on what disk drive you want to store data files, which port your plotter, printer and mouse are connected to, etc. Respond to these prompts with the drive letter or port name that the device is assigned to.

For example, if you have configured your printer to LPT1 and your plotter to COM2, respond with the appropriate device name when asked where each of these devices is located.

If an application can access only drives A: and B:, use the ASSIGN command to access hard disk drives D: and E:. See the *MS-DOS 3.3 Reference Manual.*

Keyboard (overlays)

No program asks you about your keyboard, but it may provide a keyboard overlay to help you remember how keys are defined. Since these overlays do not fit on your keyboard, use the appropriate keyboard overlay provided with your SoftPC software to duplicate them. Use a pencil or a permanent marker to write on the overlays.

The arrow keys (near [Retun]) may not work as expected with some applications. However, when using the X11 version, the arrow keys labeled on the numeric keypad overlay always work properly. The terminal version has no arrow keys on the numeric keypad. Use the keys near [Return] when the numeric keypad is not in NUMLOCK mode.

Sound

Many application programs provide sound to enhance their operation (e.g., Ready! from Living Videotext). What sounds nice on an PC may sound obnoxious on a SoftPC system. If the sound generated by the application program bothers you, refer to the application's manual for instructions on disabling the sound.

Running Applications

To run the application program, you usually set the current directory to the directory containing the program and type the command that starts it. If you have included the application's directory in the search path set by the PATH command, you do not have to set the current directory to the application's directory before starting it.

Be aware, however, that the program may *assume* its directory is the current working directory when looking for its supporting files. If it cannot find them in the current directory, an error occurs.

Using Batch Files as a Shortcut

You can use batch files to perform the directory changing and program execution associated with running an application program

For example, suppose you have a word processing program stored in the directory *d:\wordproc*. The command used to start the application is WP. A batch file named *startwp.bat* that starts this program would contain the following lines:

```
d:
cd \wordproc
wp
```

Store this batch file in a directory called *d:\progstrt*—a directory created to hold batch files that start application programs. Next, modify the PATH command in your *autoexec.bat* file to include this directory in the directory search path:

```
path=c:;d:\usr\lib\dos\utility;d:\progstrt [Return]
```

Re-execute *autoexec.bat* to make the new PATH command effective.

Now, to start your application, type:

```
startwp [Return]
```

The system searches the directory paths established by the PATH command, finds the *wp.bat* file, and executes it. *wp* changes the active drive to D:, changes the current directory to *\wordproc,* and executes the WP command to start the word processor.

Using the SlavePC Utility

The SlavePC utility lets you access the flexible disk drives on an actual PC. This can be useful to load software onto your SoftPC system if your system does not have its own flexible disk drive.

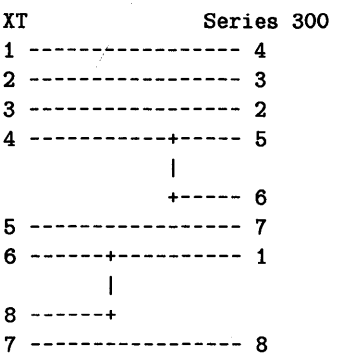
The SlavePC utility can access both 5.25-inch and 3.5-inch high or low density flexible disk drives on selected PCs. Supported PCs are the HP Vectra, IBM PC XT, IBM PC XT-286, IBM PC AT and IBM PS/2. The PC's drive A is accessed from SoftPC as drive A; the PC's drive B may be accessed from SoftPC as drive B.

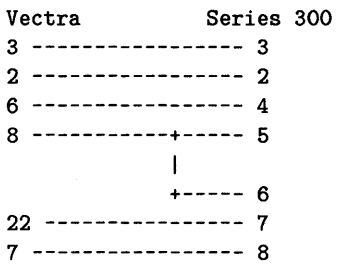
Note Use the X11 version of SoftPC when you need to access a slave drive. The terminal version cannot be used for this purpose.

Setting Up the Workstation Having the SoftPC

Before running the SlavePC utility, you will need to establish an RS-232 connection between your Series 300/800 computer and the PC. The following steps are a guideline only and assume that the tty device file is named */dev/ttya*. The actual cabling requirements may differ depending on the PC type and whether a 25-pin or 9-pin connector is used.

1. Make sure no *getty* is running on */dev/ttya*.
2. Set up read and write permission of */dev/ttya*.
3. Use the following diagrams to make the SlavePC cables.





4. Use the cable to connect the serial port on the PC to the serial port for */dev/ttya* on the Series 300/800 computer.

When you complete the cabling between the PC and the Series 300/800 computer, use the SoftPC Disk Drive setup menu to select a slave drive and to assign the tty device file to the Drive A Device File Name.

Running the SlavePC Utility

After you have set up the Series 300/800 computer, you are ready to run the SlavePC utility. The SlavePC utility is supplied on a 5.25-inch diskette. You may also get a copy from the C:\INSIGNIA directory on the SoftPC's default hard disk.

Work through the following steps to run the SlavePC utility:

1. Load the utility onto your PC.
2. Specify the flexible disk drives present on your PC as follows:

   SLAVEPC <drivea> <driveb>

   where <drivex> is one of the following:

   /H5 high-density 5.25-inch drive
   /L5 low-density 5.25-inch drive
   /H3 high-density 3.5-inch drive
   /L3 low-density 3.5-inch drive

   For example,

   ```
   SLAVEPC /H5 /H3
   ```

   specifies a high-density 5.25-inch drive on A: and a high-density 3.5-inch drive on B:.

3. Run the SlavePC utility.
4. You should see a display on the PC screen similar to the one below.

SLAVEPC
(version 2.0)
Copyright Insignia Solutions Inc.
1989

Attached with SoftPC
Drive A High Density 5.25
Drive B High Density 3.5

Hit Ctrl-Break to exit

If you do not see it or SlavePC displays the message:

```
Detached from SoftPC
```

probably the connection between the PC and the Series 300/800 computer is not properly established. Repeat and verify the steps to this point.

5. In general, you can use the slave drive A and B on the SoftPC just as you use it on the PC. However, due to the serial interface, it will be somewhat slower than direct access.

Using the RUNUX Utility

The *RUNUX* command lets you run HP-UX shell scripts from SoftPC.

Syntax

RUNUX *e:[path]scriptname*

Tips and Hints

- *RUNUX* is a DOS command.
- The script must exist on drive E:.
- No translation of the script name takes place except conversion of "\" characters to "/".
- SoftPC executes the shell script as a HP-UX child process (using conventions for *exec*).
- The standard input, standard output, and standard error of the shell process are inherited from the SoftPC process. (This usually means the terminal window where SoftPC was invoked.)
- You can use *RUNUX* to execute the following script to exit the SoftPC. You can run the command as the last operation in a batch file. Save your work first because the exit is not graceful.

```
#! /bin/sh

PPID=`ps -f -p $$ | awk '{ print $3 }' | grep -v PPID`
GPPID=`ps -f -p $PPID | awk '{ print $3 }' | grep -v PPID`
kill -15 $GPPID
```

Running the SoftPC in batch mode

Running the SoftPC in batch mode lets you execute DOS applications on HP-UX silently and unattended. This can be useful if you need to perform a DOS task but don't wish to interact with the SoftPC. To run the SoftPC in batch mode, follow the steps described below.

First, you will need the terminal version of SoftPC. If you've installed only the X11 version, you'll need to reload the SoftPC media and install the SPC_TERM fileset. For additional information, see the SoftPC Installation Guide.

Next, you will need to set up some batch files. The C:\AUTOEXEC.BAT file contains DOS commands and utilities that are executed automatically when you boot DOS. Modify AUTOEXEC.BAT to include the tasks you want performed while running SoftPC in batch mode. An easy way to do this is to put all of your commands into one global batch file and include the global batch file in AUTOEXEC.BAT. Below is an example AUTOEXEC.BAT file.

```
PATH C:\;C:\DOS;C:\INSIGNIA;C:\HELP
@ECHO OFF
PROMPT $P$G
C:\INSIGNIA\FSADRIVE E:
C:\INSIGNIA\MOUSE.COM
VER
@ECHO ON
E:\USERS\DAVE\DOS\JOBS.BAT
```

In this example, JOBS.BAT contains the commands that you want to execute in batch mode. By having a global batch file, you need only modify it and not AUTOEXEC.BAT. Here's an example batch file (JOBS.BAT):

```
E:\USERS\DAVE\DOS\CRUNCH > E:\TMP\JOBS.RES
RUNUX E:\USERS\DAVE\BIN\EXIT
```

Note that all desired output should be redirected to a file.

At the end of the batch session, you'll need to exit the SoftPC. This is accomplished by the RUNUX command as shown in the last line of the batch file above. RUNUX runs an HP-UX shell script from SoftPC. In this case, the shell script terminates the SoftPC session.

The *exit* script executed by RUNUX should reside on the HP-UX file system (drive E) and contain the following lines:

```
#!/bin/sh

PPID=`ps -f -p $$ | awk '{ print $3 }' | grep -v PPID`
GPPID=`ps -f -p $PPID | awk '{ print $3 }' | grep -v PPID`
kill -15 $GPPID
```

The steps to this point described how to configure the SoftPC for batch mode operation. To get SoftPC working in batch mode, create a shell script on HP-UX with the lines below and run it:

```
#!/bin/ksh

TERM=ansi
DDEV=/dev/null
export TERM DDEV

spc.term 2>/dev/null 1>&2
```

5

Using PAM

This chapter describes PAM, a command processor that is an alternative to COMMAND.COM. PAM lets you run applications and executable files via an interface that some people believe is easier to use than the conventional DOS interface (the one provided by COMMAND.COM). The following table shows the sections.

Item	Description
Using PAM as Your DOS Command Processor	Explains how to start PAM, make PAM the default processor, and so on.
Starting an Added Application from PAM	Describes how to start user applications.
Managing the PAM Application Display	Describes how to use functions that let you run applications from the PAM interface.
Showing .EXE, .COM, and .BAT Files	States how to see your executable files.
Inventorying New Disks	States how to get an inventory of executable files on your disks.
Running an Executable File from PAM	Describes hor to run executable programs (applications, tools, utilities, and such).
Using the File Manager	Describes the file management functions and how to use them.

Using PAM as Your DOS Command Processor

To use PAM for the current session, type:

```
pamcode [Return]
```

To change your default command processor from COMMAND.COM to PAM for future sessions, include the following SHELL command in your *config.sys* file:

```
shell = pamcode.com root
```

This establishes PAM as your default command processor. Then, to install PAM and prepare it for use, type:

```
pamsetup [Return]
```

Reboot the SoftPC to make PAM the command processor.

You can still execute DOS commands directly from the DOS prompt appearing in the third line of PAM's Main Menu.

This page intentionally has no user guide information.

Starting an Added Application From PAM

`Start Applic` allows you to run an application whose name has been added to your PAM Main Menu without having to type a complex command.

To start an application, you must begin at the PAM Main Menu that displays the names of added applications.

1. Press the arrow keys to move the arrow and highlight to the label for the application you want to run.
2. Press [F1], the function key that corresponds to `Start Applic`.

PAM looks first in the drive and the directory specified when the application was added. If the application isn't found, PAM then searches the root directories of other drives on your system. If the disk with the application is not found, you will see the following message:

`Unable to find` *application* `on` *drive:directory*

In this message *drive:directory* will be replaced by the drive and directory where PAM looked first.

At this point, you must either change to the correct directory (with CHDIR), or you must place the disk in the correct drive and press [F8] to `Continue`.

When the application is found, the display goes blank, and you see the following message on the top line of the display:

`Loading` *application name* ...

Example: Start File Manager

You can try `Start Applic` now by following these steps.

1. Use the arrow keys to highlight the File Manager label.
2. Press [F1], `Start Applic`.
3. Press [F8], `Exit FILE MGR`, to return to the PAM Main Menu.

Note

Did you start the wrong application? If you did, you will see a different display.

If you see a blank display with A:\> or C:\> on it, you started MS-DOS COMMANDS. To get back to PAM, just type EXIT and press [Return].

If there is no A:\> or C:\>, or no label that says Exit, you must reboot DOS.

If you are Prompted for Parameters

Parameters are specific instructions you include in the command to run an application or program. In some cases, you will be asked to type such additional information after you press `Start Applic`.

If you are prompted for parameters, refer to the manual that comes with your application for the correct information to type on the Enter Parameters display.

If you want to run your application without parameters, press [F1] `No Params`. If you decide not to run your application at this time, you can press [F8] to `Cancel` the `Start Applic` function and return to the PAM Main Menu.

Managing the PAM Application Display

The `Manage Applics` function in PAM lets you tailor your PAM application display and make modifications to application information. The Manage functions are:

`Add`	Add application information to PAM
`Delete`	Delete application information from PAM
`Modify`	Modify information about an application
`Reorder`	Reorder the sequence of application names on the display
`Auto Start`	Select an application to start automatically when you first turn on your system
`Exit`	Return to the PAM Main Menu.

You can use `Manage Applics` from either the PAM Main Menu or the Executable Files menu. Because you can manage only your Added application names, however, we assume you are starting from the PAM Main Menu.

To perform one of the Manage functions:

1. Start at the PAM Main Menu. Press [F5] `Manage Applics`. You see the Manage Applications menu.
2. Press the function key that corresponds to the function you wish to perform. Each Manage function is described in detail in the pages that follow.
3. Press [F8] `Exit Manage` to return to the PAM Main Menu when you finish using the Manage functions.

Add Application Information to PAM

When you Add an application, you accomplish two things:

- you Add the application's name to your PAM Main Menu, and
- you provide information to PAM that allows you to select and start the application from the PAM Main Menu.

Note Add does not make a copy of the application.

To Add an Application:

1. Start at the PAM Main Menu. Press [F5] `Manage Applics`. Then press [F1] `Add`. PAM provides you a list of many currently popular software applications to make the Add process easier for you. This listing does not represent what is on your disks, but is simply an alphabetical listing of many currently popular applications from which you can choose.

2. Look for your application on this list.

   Applications that are already added will have the word "added" above their names.

   From this display, you will follow one of the two next procedures, (step 3 or 4) depending on whether or not the application you want to add is displayed in this list.

   Applications are listed alphabetically. To see if the application you want to add is on this list, press [Next] to see the next pages (displays) of application titles. Press [Prev] to return to the previous display.

   If the application you want to add IS NOT on this list, skip to step 4.

3. **To Add a Listed Application:** If the application you want to add *is* in this listing, perform the following procedures:

   a. Use the cursor keys to move the pointer and highlight to the application name you want to add to your PAM Main Menu.

   b. Press [F1] `Add Applic`. You will see the following instructions at the top of the display:

      Type the path (drive and directory) of
      application name **and press Save**

      `A:\`

      This means that PAM assumes your application will always be found on drive A: in the root directory. The cursor is under the A:, permitting you to change this information if you wish.

If you do not want to change this information, skip to step d.

c. Type over this information if you want to change it.

   For example, if you plan to always load this application from a directory named *mydir* on the drive D:, type:

   ```
   d:\mydir''
   ```

d. Press [F1] `Save` if you want to keep this information.

e. Press [F8] `Exit` to return to the main Add Application menu.

   When you are finished adding applications, skip to step 5 to return to the PAM Main Menu.

4. **To Add an Unlisted Application:** If your application is not in the application list, follow these procedures:

   a. Press [F5] `Add Unlisted`.

      Notice that the cursor is in the field labeled `Path` under `A:\`. This means that PAM assumes your application will always be found in the disk on drive A: in the root directory. The cursor is under the A, permitting you to change this information if you wish.

      If you do not want to change this information, press [Return]. The cursor moves to the `Application Title` Field. Skip to step c.

   b. Type the Path where the application will be found and press [Return] or [Tab].

      For example, if you plan to copy your application into *\wp.dir* on drive D:, you would type:

      ```
      c:\wp.dir [Return]
      ```

      The cursor will move to the `Application Title` field.

   c. Type the name that you want to appear in the application name box on the PAM Main Menu. The name may be up to 18 characters (including blanks).

      If you decide not to type an application title at this time, skip to Step f. to leave the Add Unlisted Menu.

When you have typed the Application Title, press [Return] or [Tab] to move the cursor to the **Run Command** field.

d. Type the command that will cause the application to run. You can find this information in the manual that comes with your application disk.

   If you wish to be prompted for additional parameters when you run this application, type a ? mark after the command. For example

   ```
   a:\ws.com ?
   ```

   Notice that you must include the extension for the executable file name (.EXE, .COM, or .BAT) and that a space must precede the question mark. When you have typed the command, press [Return].

e. Press [F1] **Save** when you are satisfied that the Path, Application Title and Command to Run are all correct; press [Tab] to correct your entries; or press [F8] **Exit** to return to the Add Unlisted display.

f. Press [F8] **Exit** after you have saved the information. You return to the Add Unlisted display.

g. Repeat all of Step 4 until you are finished adding unlisted applications.

5. Return to the PAM Main Menu by pressing [F8] **Exit Add**, then [F8] **Exit Manage**.

Delete Application Information from PAM

The Delete function allows you to remove an application name from the PAM Main Menu. No files are deleted from a disk; only the name of the application that appears on the PAM Main Menu is removed.

1. Start from the PAM Main Menu. Press [F5] `Manage Applics` then press [F2] `Delete`.

   You see the names of added applications that are on your PAM Main Menu, and you are instructed to:

   `Select application to be deleted and press Start Delete`

2. Use the arrow keys to highlight the application name you want to delete from the PAM Main menu.

3. Press [F1] `Start Delete` to delete the highlighted application. You will see the following message asking you to confirm the deletion:

   `Do you really want to delete` *Application Name*?

   - Press [F8] `No` if you change your mind.
   - Press [F1] `Yes` if you want to delete the selected application name.

4. Repeat steps 2 and 3 if you want to delete any other application names.

5. Press [F8] until you return to the PAM Main Menu.

Modify Information

The Modify function allows you to make changes to the information you entered when you added an application to the PAM Main menu. You can change the Path (drive and directory), Application Title, and Run Command.

1. Start from the PAM Main Menu. Press [F5] `Manage Applics`. Then press [F3] `Modify`.

   The applications listed on this display are the application names that have been added to the PAM Main Menu. You are instructed to:

   ```
   Select application and press Start Modify.
   ```

2. Highlight the name of the application you want to modify and press [F1] `Start Modify`.
3. Use the [Tab] key to move around the fields and type your corrections.
4. Press [F1] `Save` when all the information is correct, or [F8] `Exit` to abandon your changes.
5. Press [F8] until your return to the PAM Main Menu.

Tailor Your PAM Main Menu

The `Reorder` function allows you to arrange the application names conveniently on the PAM Main Menu. You can order them according to how often you use them, or you can arrange them alphabetically by pressing just one key.

1. Start at the PAM Main Menu. Press [F5] `Manage Applics`. Then press [F5] `Reorder`. You will see the Reorder Information display.

   On the top line of the display, you are instructed to:

   ```
   Select application to be moved
   ```

   a. **To rearrange application names in alphabetical order:** Press [F4] `Alphabet Order`

   b. **To rearrange application names in a special order:**

   - Highlight the application you want to move. Press [F1] `Select For Move`. (Press [F8] if you want to cancel the move).
   - Highlight the application name that occupies the position you want to move to.
   - Press [F1] `Move It Here`. The display will be reordered.

2. When finished, press [F8] to return to the PAM Main Menu.

Starting an Application Automatically.

The Autostart function allows you to select an application to be started automatically by PAM when you start your system.

1. Start at the PAM Main Menu. Press [F5] Manage Applic. Then press [F6] Autostart.

   On the top line, you are instructed to:

   ```
   Select application to autostart.
   Currently autostarting NO APPLICATION.
   ```

2. Highlight the application you want to start automatically.

3. Press [F1] Save. The name of the application will now appear on the message line, for example:

   ```
   Select application to autostart.
   Currently autostarting DOS COMMANDS.
   ```

   Press [F4] No Autostrt if you want to cancel autostart.

4. Press [F8] until you return to the PAM Main Menu.

Now when you start DOS, the application will appear in place of the PAM Main Menu. The disk with the application must be in one of the drives. It if is not, PAM will prompt you with the following message:

```
Insert application name disk in drive d:
and press Continue, or press Cancel.
```

Insert the disk in the specified drive and press [F1] Continue, or press [F8] Cancel Autostart.

Showing .EXE, .COM, and .BAT Files

Files with extensions of .EXE, .COM, and .BAT are executable files.

To see all executable files in the current directories of all of your disks, press [F6] `Show.EXE.COM.BAT`.

Inventorying New Disks

The `Reread Discs` function ([F4]) takes an inventory of the executable files on the disks in your drives. Use it to update your file display when you change flexible disks.

1. Start from the Executable Files Menu. Place the new disk in a flexible drive.
2. Press [F4] `Reread Discs`.

Running an Executable File from PAM

`Start Program` allows you to run an executable file from the PAM Executable Files Menu.

1. You must start from the menu labeled "Executable Files". If you are on the menu labeled "Main Menu," press [F6] `Show.EXE.COM.BAT`.
2. Highlight the label for the program you want to run.
3. Press [Return] or [F1] `Start Program`.
4. You are prompted for parameters for the executable file you have selected. You may:
   - Type the parameters and press [Return] to run the selected executable file.
   - Press [F8] `Cancel` to cancel `Start Program` if you decide not to run the selected file.
   - Press [F1] `No Params` to run the program without parameters.

Example: Run COMMAND.COM From the Executable Files Menu

1. Highlight `COMMAND.COM`.
2. Press [Return] or [F1] `Start Program`. You will see the the Program Parameters Display.
3. Press [F1] `No Params` to run COMMAND.COM without parameters.

   You can now type DOS Commands.
4. To return to PAM, type `EXIT` [Return], then press any key to continue.
5. Press [F6] `Show Main Menu` to return to the PAM Main Menu.

Using the File Manager

File Manager lets you perform these DOS file management functions without using DOS commands:

- See a list of files and directories on a disk (DIR command)
- Choose another directory (CHDIR command)
- Copy a file (COPY command)
- Delete a file or directory (DEL command)
- Make a directory (MKDIR command)
- Rename a file (RENAME command)

Starting File Manager

1. Start from the PAM Main Menu. The active drive must be drive C:.
2. Highlight `File Manager`.
3. Press [Return] or [F1] `Start Applic`.

After a few seconds, the File Manager File Functions display appears.

Directories are listed first, followed by files. Directories are distinguished from files by color or underlining, depending on your display.

Use the arrow keys and [Prev]/[Next] to move around the file display.

Leaving File Manager

Press [F8] until you return to the PAM Main Menu.

Making a New Directory

1. From the File Functions display, press [F3] Make Dir. File Manager prompts:

   ```
   Type the new directory name and press "Enter".
   ```

2. Type the name of the new directory, including its path if necessary. Press [Return].

3. File Manager prompts:

   ```
   Press F1 (Start Make Dir) if selection is correct.
   ```

   - Press [F6] Start Over if the directory is incorrect.
   - Press [F1] Start make Dir to make the displayed directory.

Changing the Displayed Directory

You can select a new displayed directory directly from the File Functions display. If the directory you want to display is:

- named on the display, use [Tab] or the cursor keys to move the pointer to it, and press [F10] to select and display it.
- a subdirectory of the displayed directory, move the pointer to the label of that subdirectory to select and display it.
- the parent of the displayed directory, move the pointer to the label *parent dir* and press [F10] to select and display it.
- in the root directory of another disk, type the drive identifier where the disk is located followed by a backslash (for example, `b:\`). Press [Return] to display it.
- not shown on the display, enter its specification. Type its drive identifier (if it is on a different disk). Type its pathname if it is not in the current directory (usually the root directory) of the other disk and press [Return] to display it.

Choosing a Directory

The `Choose Directory` function [F4] is available on the main display of all other File Manager tasks as well as on the File Functions display.

When you use Choose Directory to change the displayed directory, you get two special options:

Expanded Dir	Gives you size, time and date information about each file and subdirectory in the directory.
Wildcard	Allows you to select specific files and directories. For example, you can use the wildcard `b*.hp` to display the names of files and directories that begin with B and have the extension HP.

These special features are explained later in this section.

To choose a directory:

1. Press [F4] `Choose Dir`. File Manager prompts:

   ```
   Select or type the directory name to display.
   ```

2. If the directory you want is named on the display, move the pointer to its label and press [F10].

   If the directory you want is not named on the display, type the drive and pathname of the directory that you want and press [Return].

3. If this is not the directory that you want, repeat step 2.

   If this is the directory that you want, press [F8] `Exit Choose`.

The Expanded Directory

Turn on the expanded directory:

1. With the Choose Directory display visible, press [F2] `Expanded Dir`. An asterisk will appear in the function label to remind you that it is on.

Turn off the expanded directory:

1. With the Choose Directory display visible, press [F2] `Expanded Dir`. The asterisk will disappear—indicating that Expanded Directory is off. The directory will be displayed again in non-expanded form.

The Wildcard Option

If you want to see more than one particular file or subdirectory, but not everything in a directory, you can use DOS "wildcards" to specify the characters that File Manager should match when it looks for files. See the chapter 1 of the *MS-DOS 3.3 Reference Manual* for details of using wildcards.

To display a directory using wildcards:

1. With the Choose Directory display visible, press [F3] `Set Wildcard`. File Manager prompts:

   ```
   Modify the wildcard string and press "Enter".
   ```

   The current wildcard will appear highlighted on line 3.

   The first time that you use File Manager, the wildcard will be set to `*.*` . After you have used the wildcard option, you will see the last wildcard you set.

2. Change the wildcard string, `*.*`, to the string you want to use.

3. Press [Return].

   You see your wildcard string on line 8 next to the word `Wildcard:`. You also see all of the files and subdirectories in the displayed directory that match the wildcard string you specified.

4. If you're finished setting the wildcard string and displaying directories with it, press [F8] `Exit Choose`.

Your wildcard remains active until you change it.

To remove a wildcard:

1. From the Choose Directory display, press [F3] `Set Wildcard`.

   The active wildcard will appear on line 3.

2. Press [Back space] to erase the active wildcard.

3. Press [Return].

The default wildcard `*.*` will become the active wildcard and you will see all the files in that directory.

Copying a File

Copying in File Manager lets you make duplicates of your files—one at a time. Use the DOS COPY or XCOPY commands to copy more than one file.

1. From the File Functions display, press [F6] `Copy File`.

   File Manager prompts:

   ```
   Select or type the file name to copy.
   ```

2. Select the file you want to copy.

   - If the file you want to copy is in the displayed directory, move the pointer to the file name and press [F10] to select it, or type the name and press [Return].
   - If the file you want to copy is not in the displayed directory, you can either:
     - Type the complete file specification and press [Return], or
     - Change the "Displayed Directory" to the one that contains the file you want to copy.

   File Manager fills in the complete file specification after `Copy File:` and prompts:

   ```
   Select or type the file name to copy to.
   ```

3. Specify the file name of the new copy you want to create and press [Return]. Include the drive and directory path if necessary.

   File Manager shows the complete file specification after `To File`.

   File Manager now prompts:

   ```
   Press Start Copy if selection is correct.
   ```

4. Check both file names to make certain they are correct:

   - If you made a mistake, press [F6] `Start Over`.
   - If you are ready to copy, press [F1] `Start Copy`. If you want to cancel the copy function, press [F8] `Stop Copy`.

5. When you have finished copying, press [F8] `Exit Copy`.

Deleting a File or Directory

You cannot delete directories containing files or other subdirectories. (This is to keep you from accidentally erasing them.) Nor can you delete the current displayed directory.

- From the File Functions display, press [F2] `Delete File/Dir`.

  File Manager prompts:

  ```
  Select or type the file or directory name to delete.
  ```

- Select the file or directory to delete:
  - If the file or subdirectory you want to delete is named on the display, move the pointer to the name and press [F10] to select it, or type the name.
  - If the file or directory you want to delete is not part of the displayed directory, you can either:
    - Type the complete file or directory specification and press [Return], or
    - Change the Displayed directory to the one that contains the file or subdirectory you want to delete.

  File Manager prompts:

  ```
  Press Start Delete if selection is correct.
  ```

- Check the file name or directory name to be sure it is the one you want to delete:
  - If you change your mind before you start the delete operation, you can use [Back space] to erase portions of the name, or press [F6] `Start Over` to erase the entire name.
  - If the file name is correct, Press [F1] `Start Delete`.

  You can delete another file or directory or you can leave the Delete function and return to the File Functions display by pressing [F8] `Exit Delete`.

Renaming a File

1. From the File Functions display, press [F6] `Rename File`.

   File Manager prompts:

   ```
   Select or type the file name to rename.
   ```

2. Select the file to rename:

   - If the file you want to rename is in the displayed directory, move the pointer to the file name and press [F10] to select it, or type the name and press [Return].
   - When a file to be renamed is not displayed, you can either:
     - Type the complete file specification and press [Return], or
     - Change the displayed directory to the one containing the file to rename.

   File Manager prompts:

   ```
   Select or type the file name to rename to.
   ```

3. Type the new name for your file and press [Return].

   To rename a file into a different directory, specify the complete pathname. You can only rename a file on the same disk. You cannot specify another drive and use the same file name to move a file to another disk. File Manager prompts:

   ```
   Press Start Rename if selection is correct.
   ```

4. Check both the existing and the new file names:

   - If you want to change either name, press [F6] `Start Over`.
   - If you want to end the Rename function, press [F8] `Exit Rename`.
   - If you are satisfied with your selections, press [F1] `Start Rename`.

   You can now rename another file or `Exit Rename` press [F8].

6

Using MCS Utilities

This chapter discusses utilities that let you: print files having extended characters, translate extended characters in ASCII files, and print graphics in color or monochrome directly from a display to a printer.

Except for installing the utilities, which must be done first, you can read the sections in any order.

Information About MCS

You can install and use MCS if you want to:

1. Print files containing **extended** characters on HP PCL or Daisywheel Printers. Extended characters are international (E, N), math, and line drawing characters.
2. Translate the extended characters in ASCII (unformatted) files.
3. Print graphics in color or monochrome directly from your computer screen on HP PCL Printers. You can also adjust printing features while you print text or graphics from the screen. So, you can adjust printing features without leaving the application you are in.

How Do MCS Utilities Help

MCS translates **character sets.** MCS cannot translate **languages.**

A character set is a group of coded characters. Each character has a different combination of bits that represent letters and numbers to a computer.

Why do character sets need translation? Translation is needed because various computer models and printers use different character sets.

- Your SoftPC uses the PC-8 character set.
- HP Printers, the HP 150, the HP 9000 (HP-UX) and the HP 3000 computers use the Roman8 character set.

The MCS Utilities understand these character set differences. When properly configured, MCS converts your computer's ASCII value of a character (e.g., 163 in PC-8) to the HP Printer's ASCII value of that character (199 in Roman8). So, when the your DOS system types a character, the printer prints the same character.

The MCS Utilities

MCS consists of the following three utilities.

File Translate — Like MS-DOS COPY in that it copies a file from one disk or directory to another, but while copying, the utility also translates the file's character set according to specifications. You can use an HP-UX ASCII file containing extended characters on your SoftPC, or use a DOS file containing these characters on HP-UX. The ASCII file **must not** contain formatting or control codes. The utility translates characters from the HP-UX Roman8 character set to your computer's PC-8 character set.

Print Screen — Lets you print text or graphics directly from your computer screen as follows:

- Print graphics from the screen in color (with a color printer and monitor).
- Adjust printing features from your computer without leaving your application.
- Position text or graphics on a printed page.
- Print two screens per page.

To use the utility, the printer must support Printer Control Language (PCL).

Print Translate — Configures your computer system to automatically translate text from the DOS character set to the character set of your printers (up to four printers). Each printer must be an HP PCL Printer or an HP Daisywheel Printer.

Installing MCS Utilities

During INSTALL, messages on your screen prompt you to:

- Select which MCS Utilities you need
- Configure those Utilities
- Transfer those Utilities to your hard disk or work disk.

After you finish the INSTALL procedure, MCS is available every time you start your computer system.

The following section "INSTALL Configuration" lists the settings for each utility selected during INSTALL. If you wish to change the default settings, refer to the section on each utility.

What You Need

- For Print Screen Utility:

  One HP PCL Printer. Some of the HP PCL Printers are:
  - ThinkJet Family of Printers
  - LaserJet Family of Printers
  - QuietJet Family of Printers
  - PaintJet

- For Print Translate Utility

  One of the following HP PCL or HP Daisywheel Printers. (The Print Translate Utility can be used with a maximum of four printers).

  - Some of the HP PCL Printers are:
    ThinkJet Family of Printers
    LaserJet Family of Printers
    QuietJet Family of Printers
    PaintJet
  - Some of the HP Daisywheel Printers are:
    HP 2601 Daisywheel Printer
    HP 2603 Daisywheel Printer

- For File Translate Utility

  No printer is required.

Before You Start

Read this section before you install the MCS Utilities.

INSTALL Modifies AUTOEXEC.BAT and CONFIG.SYS Files

INSTALL modifies your AUTOEXEC.BAT and CONFIG.SYS files or automatically adds these files to your system if they did not exist before.

Note If you need to arrange the MCS driver in a specific order in your CONFIG.SYS file, you can manually install the MCS driver. Refer to the "MCS and Installable Device Drivers" section in the section entitled "Advanced MCS."

Printers

If you plan to use MCS with a printer, you need to make sure your printer is operating correctly before you install MCS.

You need to know which LPT or COM port your printer(s) are assigned to.

INSTALLING MCS

1. Make drive D: your active drive by typing:

   `d:` Return

2. Change to the *\usr\lib\dos\utility\mcs* directory by typing:

   `cd \usr\lib\dos\utility\mcs`

3. Type:

   `install` Return

4. A message on your screen prompts you to enter the drive and path where you plan to install the MCS Utilities.

   Type:

   `C:\`

Follow the instructions on your screen. (If you need help, see the next section.)

Explanation of INSTALL Screens

Follow the instructions on your screens to install the MCS Utilities. If you need further explanation, refer to the information in this section. The information is listed by the screen title.

Select Utilities

A message on the following screens asks if you want each utility.

```
Utility 1: File Translate

Utility 2: Print Screen

Utility 3: Print Translate
```

- If you answer Y, the INSTALL procedure guides you to configure (set up) that utility. INSTALL automatically transfers the configuration data to your specified drive and directory.
- If you answer N, the INSTALL procedure prompts you to select another utility.

Note

If you want to translate character sets in data you print directly from your computer screen, you must install *both* the Print Screen Utility and the Print Translate Utility.

Some printers provide several character sets and therefore print extended characters correctly. If your printer already prints extended characters correctly, the Print Translate Utility may not be needed.

Print Screen Printer Menu

Enter the number corresponding to the printer connected to LPT1.

Utility 3: Print Translate

A message on your screen asks if you want to install the Print Translate Utility. Enter Y or N.

Task 1 Instructions

You see this screen after you select the Print Translate Utility. (If you did not select the Print Translate Utility, follow the messages on your screen to finish the INSTALL program.)

To install the Print Translate Utility, you complete two tasks.

Your first task is to select a small number of translations (working set) from a large list of available translations. The working set contains the character set translations that you want to use on the data you send to your printer(s). These are the translations you want for everyday use.

Determine Character Sets. You need to know a source character set and a destination character set for each translation.

- The source character set is determined by the computer or application that generated the data you want to translate.
- The destination character set is determined by the printer in your system.

Table 6-1. Character Sets of Some Computers and Printers

Character Set	Computer or Printer
PC-8	Vectra SoftPC IBM PC IBM PC XT IBM PC AT
Roman8	HP PCL Printers HP Daisywheel Printers

Select Translations

Select all the character set translations that you intend to use frequently on text that you send from your computer to HP printers.

- Select as many translations as you need. To select/remove, move the highlight to a translation and hit the space bar.
- Select from the translations that lists your printer. If a printer is not listed, select a translation where the destination matches the printer's character set. For example, when you see two sets of translations:

  PC-8—> Roman8

  PC-8—> LaserJet

  If you have a LaserJet, select the translation that says "PC-8—> LaserJet."

The translations you choose are stored in memory and are available when you want to assign a translation to a printer.

Task 2: Printer Information

Your second task is to configure the printers in your system. Follow the instructions on your screen.

Step 1: Choose a Printer

Select a printer to set up. If you have more than one printer in your system, this screen will be repeated later.

Step 2: Printer Ports

Enter the parallel or serial port that your printer is connected to. We recommend that you select a parallel or serial port. Selecting OTHER allows you to select from a list of MS-DOS logical devices which are only used in special applications.

Step 3: Select a Translation

Your working set of translations that you selected earlier appears on your screen. Select the translation that includes your printer.

INSTALL assigns **one** character set translation for each printer in your system. If you want to use **more than one** translation per printer, assign your most frequently used character set translation now. Later, you can temporarily assign another translation using the PRNTRAN command.

Printer Control Mode

Usually, the printer control mode is automatically assigned and you will not see this screen. The Printer Control Mode allows MCS to translate text characters without translating the printer escape sequences and control codes.

If you see this screen, follow these instructions:

Select PCL for the following printers:

- ThinkJet Family
- LaserJet Family
- QuietJet Family
- PaintJet
- 2602 Daisywheel Printer

Select DW for HP 2601 and 2603 Daisywheel Printers.

If you select NONE, MCS translates all the characters including the escape sequences and control codes.

Step 4: Print Translate ON/OFF

Select Y for Translation ON if you want character set translation for most of the data you send to this printer. You can still temporarily turn Translation OFF to this printer by using the PRNTRAN command.

Select N for Translation OFF if you rarely need character set translation. You can still temporarily turn Translation ON to this printer by using the PRNTRAN command.

Step 5: Verify Information

Determine whether the information is correct or not. If the information is incorrect, you are prompted to go back to Step 1. and change the information.

Step 6: Another Printer?

Select whether you want to set up another printer. You can set up a maximum of four printers.

Update Your System Files

Press [Return].

When the updating of your system files is complete, you will see this message:

```
SYSTEM FILES HAVE BEEN UPDATED
```

Press [Return] to continue.

Network Printers

You will see this screen only if you did not configure a network printer. Select N, since the SoftPC does not support network printers.

Completing MCS Installation

You are finished with the INSTALL procedure.

You must restart your SoftPC before the MCS Utilities are ready to use.

INSTALL Configuration

Here is a list of the settings assigned to each utility during the INSTALL procedure. If you need to change the settings, refer to the section on each utility.

Configuration for File Translate Utility

The File Translate Utility does not contain any default settings. All information is specified directly in the FILETRAN command.

Configuration for the Print Screen Utility

- Type of Printer: Specified by User
- Utility ON or OFF: ON œw
- Color or Monochrome Output: Monochrome
- Printer Orientation: Portrait, Top
- Background and Foreground Reversal: ON
- Page Eject: ON
- Video Mode: Automatic

Configuration for the Print Translate Utility

- Translation ON or OFF: Specified by user
- Character Set Translation: Specified by user
- Printer Control Mode: PCL or DW specified by translation

Using the File Translate Utility

The File Translate Utility translates the characters in a source file into characters of the destination set. It then saves the translated version in a destination file.

For example, the File Translate Utility allows you to use an HP-UX, HP 150 or HP 3000 ASCII file, containing extended characters, on your computer. You can also use your ASCII file, containing extended characters, in HP-UX.

This section explains how to:

- Convert to an ASCII File
- Determine the Character Sets you need for the translation
- Use the FILETRAN command syntax
- Select Options
- Translate and Copy a File
- Redirect the Input and Output of the FILETRAN command

Note Before you continue, make sure you installed the File Translate Utility. See the section entitled "Installing MCS Utilities."

To use the File Translate Utility, you must do three tasks, The next sections describe each of the tasks.

The File Translate Utility translates *every* character in a source file to the character in the destination character set. The destination file is the same size as the source file because the utility produces one translated character for each character in the source file.

Task 1. Convert to an ASCII File

The File Translate Utility only works on ASCII files. Since the File Translate Utility translates all the characters in a file, you must remove all the formatting or control codes from your source file to make an ASCII file. An ASCII file contains only text or data.

For example: To remove the formatting commands from a word processing program, you must remove all the special codes for italics, boldface, margin settings, tabs, etc.

If you do not remove these codes, your translated version may not be the same as the original file.

Many applications provide a function to remove the formatting codes. Refer to the instructions that come with your application.

Note Some applications CANNOT remove all the formatting or control codes to produce an ASCII file. The File Translate Utility cannot be used with files produced by these applications.

Task 2. Determine Character Sets

Your second task is to determine the character sets for the translation. When you use the FILETRAN command, you must specify two character sets in the command line:

- The Character Set of your source file
- The Character Set you want for your destination file

Determine Source File Character Set

In most cases, your source file's character set will be the same as the *computer that made your file.*

Some character set identities are listed in Table 6–2:

Table 6–2. Character Sets of Some Computers

Character Set	Computer
PC-8	Vectra SoftPC IBM PC IBM PC XT IBM PC AT
Roman8	HP 150 HP 3000 HP 9000 HP-UX HP 9000

Determine Destination File Character Set

Your destination character set is the same as the *computer which uses the destination file.*

See the table on the previous page to select a destination character set.

Note

The computer you are using to run the File Translate Utility can have a different character set than your source and destination character set.

For example, you can use your computer (PC-8) to translate a file with an ECMA-94 source character set to a Roman8 destination character set.

Once you determine the character sets, and you convert your source file to an ASCII file, you are ready to translate files using the FILETRAN command.

Task 3. Translate Files

The next section describes the FILETRAN command syntax, and the following section "Select Options" describes two ways to specify character set translations in the FILETRAN command. Review these two sections before you read the section "Translate Files: Examples."

FILETRAN Command

The FILETRAN command translates an ASCII source file from one character set to another. The translated version is saved as the destination file.

The FILETRAN command and the options can be typed in upper or lower case letters. You can use either a comma or a space between filenames.

The syntax for the FILETRAN command is:

$$[d:][path]\ \texttt{FILETRAN}\ sfile, dfile \left[\begin{array}{l} /\texttt{T}src:dest \\ /\texttt{N}n \\ /\texttt{F}table \\ /\texttt{L} \end{array}\right]$$

d:	the drive that contains the MCS Utilities
path	the path to the MCS Utilities
sfile	the source file to be translated
dfile	the destination file which is the translated version of the source file
/T	specifies the file translation using the *names* of the source and destination character set
src	the source character set name
dest	the destination character set name
/N*n*	specifies the file translation using the number *n* as displayed by the /L option
/F*table*	specifies an optional external file that contains additional translation tables
/L	lists the Available File Translation Tables to your screen

Display FILETRAN Help Screen

This command displays the FILETRAN command syntax and a brief description of each of the options. Type this command:

```
FILETRAN [Return]
```

The command syntax and descriptions of the options appear on your screen.

Select Options

The options of the File Translate Utility allow you to:

1. List all the available translations to your screen with the /L option.
2. Select between two options to specify a translation: You can either:
   a. Use the /N option to specify the Set# of the translation from the Available File Translation Tables.

      OR

   b. Use the /T option to specify the translation by the names of the source and destination character set.

   You CANNOT use both the /N and the /T option in the same FILETRAN command. The following sections describe these options.
3. Specify translations from an external table (if you are supplied with an external table). The section "Specify Translations from an External Table with the /F Option" describes this option.

/L Option: List Available File Translation Tables

The /L Option lists all the available translations from the Available File Translation Tables.

You must specify translations from this table in the FILETRAN command line.

To list the Available File Translation Tables to your screen, type this command and press [Return]:

```
FILETRAN /L
```

The Available File Translation Tables appears on your screen. This is an example of what you might see:

```
                Available File Translation Tables

Set#        Source                      Destination

 1          PC-8            -->         ROMAN8
 2          ROMAN8          -->         PC-8
```

/N Option: Specify Translation by Number

You can also specify the translation by entering /N and the translation Set# from the Available File Translation Tables. Use the /L option to list the Available File Translation Tables.

To use the /N option, follow these steps:

1. Select a translation from the Available File Translation Tables (see the example of the table in the "/L Option" section).
2. Enter the Set# for the translation after the /N option in the FILETRAN command, like this:

```
FILETRAN sfile,dfile /N
```

In this example, the File Translate Utility uses translation #2, so the translation specified is Roman8 to PC-8.

/T Option: Specify Translation by Character Set Name

You can specify the translation by entering /T and the name of the source and destination character set from the Available File Translation Tables. Use the /L option to list the Available File Translation Tables.

This is an example of the FILETRAN command using the /T option to specify the character set translation by name:

```
FILETRAN sfile,dfile /TRoman8:PC-8
```

Translate Files: Examples

Now that you reviewed the FILETRAN command and its options, let's look at some examples of how to translate a file. All the examples have an HP 150 file with the filename "Report" that contains the characters needing translation. You want to rename the file "Report2" and use it on your computer. Therefore, you will use the translation Roman8:PC-8 (Set #2).

Notes on Translating Files

The following notes apply to the examples on the next page:

1. When you type the FILETRAN command as shown in the following examples, make sure you type the drive and/or path so that FILETRAN can be found.
2. If you do not specify a drive designator for the source and destination file, FILETRAN will look to the current drive for the file.

Example 1:

The following steps describe how to translate a file from drive D: to drive A: using the example file Report.

1. Convert Report to an ASCII file.
2. Enter the FILETRAN command using either the /N or /T option to specify the translation:

```
FILETRAN D:Report,A:Report2 /TRoman8:PC-8
```

OR

```
FILETRAN D:Report,A:Report2 /N2
```

FILETRAN now translates the characters from the Roman8 character set of HP-UX to the PC-8 character set of DOS. Your drive A: now contains the translated file Report2.

Example 2:

If you want to use the same filename for both the source and destination file, you need to *type the filename twice.* Just typing the drive designator for the destination file will not work. Type this command and press Return:

```
FILETRAN A:Report,D:Report /N2
```

Example 3:

If you want the destination file to go on the same disk as the source file, enter a command with the same format as this example:

```
FILETRAN A:Report,A:Report2 /N2
```

Now you have the same text in two different character sets on the same disk.

Caution If you specify the same filename on the same disk for both the source and destination file, make sure you do not need your source file. MCS will replace the source file with the translated version, so the contents in your original source file will be lost.

Translating Files with Unique Characters

All character sets contain some unique characters that cannot be found in other character sets. Sometimes, a character in your source character set may not exist in the destination character set. File Translate selects a character from the destination set that resembles the character from the source character set.

If you reverse the process, File Translate will again select the character that resembles the character. Note that this new character can be different from your original character.

Specify Translations from External Table with /F Option

Read this section only if your dealer or HP representative supplies you with a disk containing additional translation tables. If you have an external table, you specify translations following these steps:

Note You CANNOT specify translations from the built-in MCS files PTRANALL.TBL or PRNTRAN.TBL. These files are configured for the Print Translate Utility.

---

1. We recommend that you copy the external tables to the same directory where you installed MCS. Make sure the current drive points to the directory containing the MCS Utilities.
2. Type this command and press [Return]:

   ```
   FILETRAN /Ftable /L
   ```

   The translations from the external table appear on your screen as the first part of the Available File Translation Tables. Note that only Set# 1 is from the external table. The Available File Translation Tables look like the following:

   ```
                  Available File Translation Tables
   Set#           Source                    Destination

     1            PC-8            -->       ISO7-F
     2            PC-8            -->       ROMAN8
     3            ROMAN8          -->       PC-8
   ```

3. Select a translation and enter the translation in the command line. If you specify a translation #1 from the external table, you need to specify /F*table* in the command, like this:

   ```
   FILETRAN sfile,dfile /TPC-8:ISO7F /Ftable
   ```

   We recommend that you specify translations from an external table with the /T option, not the /N option. FILETRAN translates the characters in your file, using the character sets from the external file that you specified in the command line.

Note You must specify the /F*table* option

- Every time you specify translations from a file containing the external tables.
- Every time you want to use /L to list the translations available from the external tables.

Redirecting the Input and Output of FILETRAN

You can redirect the input or output of the FILETRAN command by not specifying the source file or the destination file.

If you do not specify a source file, the source file defaults to the standard input device. Make sure you type a comma (,) before the destination file.

```
FILETRAN ,Report2 /N2
```

In this example, you must now supply input from the keyboard. Your input will be translated and put into the file, Report2.

If you do not specify a destination file, the destination file defaults to the standard output device. Make sure you type a comma (,) after the source file.

```
FILETRAN Report, /N1
```

In this example, the translated version of Report outputs to the screen.

If you are an advanced user, you can redirect the input and output of FILETRAN to other commands. Refer to the chapter called *Using DOS* for more information on redirecting input and output.

If Something Goes Wrong

If you used FILETRAN and the translated version of your file is not satisfactory, check the following causes:

- Unique characters in the file.
  These unique characters only exist in the source character set. You must manually insert a substitute for these characters in the translated version.
- Wrong translation was chosen.
  You must select another translation and re-run the FILETRAN command.
- Structured data in the file.
  You must manually remove the structured data from the translated version.

Using the Print Screen Utility

The Print Screen Utility allows you to easily print text or graphics data directly from your computer screen.

The Print Screen Utility only works on HP PCL Printers. If you have a ThinkJet or QuietJet Printer, make sure the fifth panel switch is down so that the printer operates in HP Mode.

This section explains how to:

- Print text or graphics from the screen
- Change options using the five second delay feature
- Change options using the PSCREEN command
- Print two screens per page

Note Before you continue, make sure you installed the Print Screen Utility. See the section entitled "Installing MCS Utilities."

Using the Print Screen Utility

When you installed MCS, the Print Screen Utility installed a default set of options to control the printer features. The following are the default settings:

Option	Setting
Name of printer:	User specified
Utility ON or OFF:	ON
Color or Monochrome Output:	Monochrome (except for PaintJet)
Printer Orientation:	Portrait, Top
Background and Foreground Reversed:	ON
Page Eject:	ON
Video Mode:	Automatic

You can choose between two methods to temporarily change the default options. MCS uses the options changed by either method until you restart your system or reset the option. For more information, refer to the following two sections on changing options.

Method 1. Change Options during the Five Second Delay

Method 2. Change Options using the PSCREEN command

To Print From the Screen

Your computer sends printer output to LPT1. If you want to use a printer that is not configured as LPT1, redirect LPT1 to your printer's MS-DOS logical device. To redirect your printer, refer to the MS-DOS MODE command in the *MS-DOS 3.3 Reference Manual.*

Print Text or Graphics from the Screen

Press [Shift]+[Prt Sc].

The Print Screen Utility waits five seconds before printing. This five second delay allows you to quickly change options to provide the best printed output. Press [Return] to override the delay and print immediately. The Print Screen Utility prints the text or graphics according to the current configuration of the options.

Note When printing graphics from the screen, DO NOT use the DOS GRAPHICS command. The GRAPHICS command does not work on HP PCL Printers. The PSCREEN command of the Print Screen Utility replaces the function of the GRAPHICS command.

Change Options During Five Second Delay

The Print Screen Utility waits five seconds before printing. The five second delay feature allows you to control the printed output without leaving your current application. The five second delay allows you ample time to make any or all of the following changes:

- Change video mode.
- Change options such as page eject, color output, printer orientation, and background to foreground reversal.
- Press [Return] to skip the delay and print immediately.

Press the appropriate key or keys to change the options while you print from the screen. Table 6–3 has a complete list of the options that can be changed during the Five Second Delay. MCS uses the options changed by the five second delay until you restart your system or reset the option.

Table 6-3. Change Options During 5 Second Delay

Press Key	To Change Setting**
T*	TOP, PORTRAIT Page Position
M	MIDDLE, PORTRAIT Page Position
B	BOTTOM, PORTRAIT Page Position
L	LANDSCAPE Page Position
Y*	DO Page Eject After Printing
N	NO Page Eject After Printing
C	Print in Color
W*	Print in Black & White
R*	Reverse background & foreground colors
U	Do not reverse background & foreground
[Alt] 0..16	Refer to "Change Video Mode during 5 Second Delay"
[Return]	Start printing immediately

* Indicates default setting

**Refer to the section "Change Options using the PSCREEN Command" for an explanation of the settings

Settings R and U are for graphics only

Setting C is for color printers and monitors only

Change Video Mode During 5 Second Delay

The Print Screen Utility uses the video mode to interpret the data on your screen to provide the best printed output. The default video mode is A for automatic determination of the mode. If your printed output is not correct, you can follow these steps to specify a video mode during the five second delay:

1. Refer to the section "Selecting Video Mode for the Print Screen Utility" in the section entitled "Advanced MCS" to select the video mode.
2. During the five second delay, hold down [Alt] and press the number **ON THE NUMERIC KEYPAD.** Typing the number on the alpha-numeric keyboard does not work.

   For example, during the five second delay:

   Hold down [Alt] and type 16. Release [Alt].

All output is printed in video mode 16. The video mode remains set at 16 until you reset the video mode or until you re-start your system.

Change Options with the PSCREEN Command

You may use the Print Screen Utility with many different applications. Some applications require different printing features. The Print Screen Utility allows you to change the options from MS-DOS or from a batch file.

This section describes how to change each of the default settings. These changes remain until you re-start your computer, change the option with a PSCREEN command, or change the setting during the Five Second Delay.

The PSCREEN Command

You use the PSCREEN command to temporarily change the options of the Print Screen Utility. The PSCREEN command and its options can be typed in upper or lower case letters. This is the syntax for the PSCREEN command:

```
[d :][path] PSCREEN [/UON | /UOFF][/NON | /NOFF]
                    [/RON | /ROFF] [/CC | /CM]
                    [/PT | /PM | /PB | /PL]
                    [/Dprinter]
                    [/MA | MO..16] [/L]
```

d:	the drive that contains the MCS Utilities
path	the path to the MCS Utilities
/U	enables or disables the Print Screen Utility
/N	ejects the page after printing
/R	reverses background and foreground color from the screen to the printer
/C	prints from the screen in color or monochrome
/P	positions the output on the page
/D	identifies the printer
printer	the printer used with the Print Screen Utility
/M	automatically determines the video mode (/MA) or selects a specific video mode from 0 to 16
/L	lists the configuration of the Print Screen Utility

If you would like to change several features, you may type some or all the changes in a single command. For example, this command changes all the feature settings and lists the new settings on your screen:

```
PSCREEN /UOFF /NOFF /ROFF /CC /PB /DLaserJet /M5 /L
```

Display PSCREEN Help Screen

Type this command to see the PSCREEN command syntax and a brief description of each of the optional commands:

```
PSCREEN [Return]
```

/L Option: List Configuration

To see the current configuration of the Print Screen Utility, type this command and press [Return]:

```
PSCREEN /L
```

Your screen lists the current settings of the options.

/U Option: Print Screen ON/OFF

The /U option enables/disables the Print Screen Utility (default is ON).

- You may not need the Print Screen Utility for all your applications. Enter this command to turn Print Screen off.

  ```
  PSCREEN /UOFF
  ```

- To return the default of Print Screen ON, enter:

  ```
  PSCREEN /UON
  ```

/N Option: Change Page Eject Setting

You can select the page eject setting at ON or OFF. The default setting is ON which enables the printer form feed and ejects the printed page, after your screen is printed.

- To turn the Page Eject setting to OFF, enter this command:

  ```
  PSCREEN /NOFF
  ```

- To turn Page Eject setting back to ON, enter this command:

  ```
  PSCREEN /NON
  ```

/R Option: Reverse Background and Foreground

This option is only available for printing graphics. The /R option reverses the background and foreground color from the screen to the printer.

For example, you have a black screen with a white line. With the /R setting ON, Print Screen Utility allows you to print a black line on a white page.

In another example, you have a red screen with a blue line. With the /R setting ON, your color printer prints a red line on a blue page.

In most cases, the following instructions will work:

- If you have a black or dark-colored screen, make sure the /R option is ON. ON is the default setting. If you need to turn the /R option ON, type this command and press [Return]:

  ```
  PSCREEN /RON
  ```

- If you have a white or light-colored screen, turn the /R option OFF with this command:

  ```
  PSCREEN /ROFF
  ```

/C Option: Change to Color

You can select Monochrome or Color output. The default setting is Monochrome except for the Paintjet Printer. The default setting for the PaintJet is Color.

- To change to a color output, enter this command:

  ```
  PSCREEN /CC
  ```

  If you select the /CC option, make sure your printer supports color output.

- To change to Monochrome output, enter this command:

  ```
  PSCREEN /CM
  ```

/P Option: Change Page Orientation

The page orientation is how text or graphics is positioned on the printed page. The default setting is Portrait, Top Orientation.

The following are the Printer Orientation settings:

- /PT prints in the portrait orientation, at the top of the page.
- /PM prints in the portrait orientation, at the middle of the page.
- /PB prints in the portrait orientation, at the bottom of the page.
- /PL prints in the landscape orientation, at the top of the page.

The HP PCL Printers support all these orientations, except:

- ThinkJet always prints from the current print position regardless of which portrait setting is chosen.
- LaserJet is the *only* printer that prints text in the landscape orientation. All printers print graphics in both the portrait and landscape position.

To change the printer orientation, enter the PSCREEN command with a slash (/) followed by the setting. For example, to change the setting to landscape (PL), type the following command and press Return:

```
PSCREEN /PL
```

The printer orientation is changed to landscape.

/M Option: Change Video Mode

The Print Screen Utility is set to automatically determine which mode your video adapter is in. If your output is not correct or the printed colors do not match the colors on your screen, specify a video mode by number.

You can specify a video mode from 0 to 16.

For EGA, CGA, or Hercules Monochrome, follow the instructions in the section entitled "Advanced MCS."

/D Option: Change the Printer

When you installed the Print Screen Utility, you named the printer that you will use with the Print Screen Utility. Thinkjet is the default setting.

If you change the printer, Print Screen Utility needs to know of this change. Make sure the new printer is an HP Printer that supports Printer Control Language (PCL).

Sample of HP PCL Printers

- Thinkjet Family of Printers
- Laserjet Family of Printers
- Quietjet Family of Printers
- Paintjet

To change the printer, type the PSCREEN command and the name of the *new* printer.

`PSCREEN /D`*Printer* Return

Print Screen Utility will now work on your new printer.

Note If your new printer is not configured to LPT1, redirect LPT1 to your printer's MS-DOS logical device. To redirect your printer, refer to the MS-DOS MODE command in the *MS-DOS 3.3 Reference Manual.*

Print Two Screens on One Page

If you have less than one half page of text or graphics on your screen, you can print two screens on one page. *This option does not work in the landscape printer orientation.*

Note The ThinkJet prints from the current page position. To print two screens on one page, press N during the five second delay and print two screens.

For printers other than ThinkJet, follow these steps:

1. To print the first copy, use the print screen function. During the 5 second delay, press T and N. These settings print the screen at the top of the page and do not allow the page to eject from the printer.
2. To print the second copy, use the print screen function. During the 5 second delay, press B and Y. These settings print the screen at the bottom of the page and eject the page from the printer.

You have two screens printed on one page.

Using the Print Translate Utility

The Print Translate Utility configures your computer system to automatically translate characters as text is sent to a printer. This utility does not print text by itself. You send text to the printer in your usual manner. The PRNTRAN command lets you change the configuration you selected when you installed MCS.

This section explains how to:

- Use the Print Translate Utility
- Adjust Options
- Change Working Set of Translations
- Temporarily Add Another Printer (if you have less than four printers configured).

Note Before you continue, make sure you installed the Print Translate Utility. See the section entitled "Installing MCS Utilities."

Using the Print Translate Utility

The Print Translate Utility configures your computer to automatically translate characters as text is sent to a printer. You already configured your computer for a particular character set translation when you installed MCS.

If you specified the Utility setting at ON for a particular printer, the Print Translate Utility runs automatically. The characters in the text are translated every time you send text through a configured device to that printer. (A device can be a parallel or serial port, or an MS-DOS logical device.)

If you want to temporarily change the installed configuration, use the PRNTRAN command with the options described in the section "Select Options."

The Print Translate Utility configures your computer—it cannot print text. Therefore, you can send text to the printer in your usual manner. Following are two common ways of sending text to the printer:

1. Use the PRINT command from DOS to send data to a local printer.
2. If you are using an application, follow the printing instructions for that application.

Note If you use a ThinkJet or QuietJet Printer, make sure it operates in HP Mode. Refer to the instructions that come with your printer.

PRNTRAN Command

Use the PRNTRAN command to temporarily change the configuration of the Print Translate Utility. The PRNTRAN command and its options can be typed in upper or lower case letters. This is the PRNTRAN command syntax:

[*d* :][*path*] PRNTRAN *device* [/UON | /UOFF]
[/T*src* : *dest*] [/R]
[/MPCL | /MDW | /MDEFAULT]
[/L]

d:	the drive that contains the MCS Utilities\
path	the path to the MCS Utilities
device	a serial port (i.e. SER1 or SER2)
	a parallel port (i.e. PAR1, PAR2, or PAR3)
	an MS-DOS logical device name such as COM1 or LPT1
/U	enables or disables the translation of data to a specific device
/T	selects a new translation from the Print Translation Table. Specifies source and destination character set.
src	the source character set
dest	the destination character set
/R	removes the configuration and disables the translation for a particular device
/M	specifies the printer control mode
/L	lists on your screen the current configuration for each device and also lists the Available Print Translation Tables.

These commands are explained in detail in the section entitled "Select Options."

Note We recommend using a port (For example, PAR1 or SER2) as the device for a local printer. If print translation does not occur when using a port as the device, refer to the section "Changing a Port to an MS-DOS Logical Device" in the section entitled "Advanced MCS."

Display PRNTRAN Help Screen

This command displays the PRNTRAN command syntax and a brief description of each of the optional commands. Type this command:

```
PRNTRAN [Return]
```

The PRNTRAN syntax and description of the commands appear on your screen.

Select Options

When you use the Print Translate Utility with different applications, you may need to *temporarily* change the option's default setting to use MCS with the application. The settings will return to the installed settings when you restart your system.

To permanently change the settings, you must repeat the INSTALL procedure or edit the MS-DOS commands placed in your AUTOEXEC.BAT file by INSTALL. To do this, refer to the section "Change MCS Options Permanently" in the section entitled "Advanced MCS."

/L Option: List Configuration

When you installed the Print Translate Utility, you specified a character set translation and a printer for each device in your system. If you forget which device to use with the PRNTRAN command, type in this command and press [Return].

```
PRNTRAN /L
```

Your screen lists the current configuration for each device. The configuration includes the translation you chose for each device, the printer control mode, and whether the Print Translate Utility is ON or OFF for that device.

The following item shows a sample configuration for Parallel Port 1.

```
        PRINT TRANSLATE CONFIGURATION

PAR1

TRANSLATION ON/OFF      ON
TRANSLATION TABLE       PC-8  -->  LASERJET
PRINTER CONTROL MODE    PCL
```

The /L option also lists the Working Set of Print Translation Tables.

/U Option: Print Translate ON/OFF

Some applications do not need character set translation. The /U option allows you to turn off the Print Translate Utility when it is not needed.

The /U option enables or disables character set translation for a particular device (port). The default setting is ON.

Some applications translate character sets. If the characters do not print correctly when using this application, turn Print Translate OFF.

/T Option: Change Character Set Translation

When you installed the Print Translate Utility, you specified one character set translation for each device. Use the /T command to change the character set translation. Use the /L option to list the Working Set of Print Translation Tables to the screen. Make sure you select a translation from the Working Set.

For example: You want to change the character set translation assigned to Parallel Port 1. PC-8 is the new source character set, ThinkJet is the new destination character set.

Type this command and press [Return]. You must include the *device* in the command line.

```
PRNTRAN PAR1 /TPC-8:ThinkJet
```

PC-8:ThinkJet is the new character set translation assigned to Parallel Port 1.

/R Option: Remove Port

The /R option removes the configuration assigned to a particular port. It also stops character set translation on text sent through that particular port to the printer.

Note The /U command stops character set translation *without* removing the configuration. The /R command stops character set translation *and* removes the configuration.

Use the /R option only in the following circumstances:

- If you remove the printer connected to the device. For example: You remove a ThinkJet from Parallel Port 2. Type `PRNTRAN PAR2 /R` and press [Return].
- If you want to remove a device so that you can replace it with another device.

/M Option: Change Printer Control Mode

The printer control mode is the specific set of escape sequences and control codes used by a printer. In most cases, your correct printer control mode was automatically set by the Print Translation table.

This automatic mode setting should work in most applications. Use the /M option to change the printer control mode *only* when your printed output is not correct. For more information, refer to the section entitled "Advanced MCS."

Add Printer

If you have less than four printers configured for the Print Translate Utility, you can temporarily configure an additional printer using the PRNTRAN command. To do this, use the PRNTRAN options to specify the device, the translation, and whether you want translation ON or OFF. Enter a command with the same format as the examples:

To temporarily add a printer, enter:

```
PRNTRAN SER2 /TPC-8:LaserJet /UON
```

To permanently add a printer, you must re-run the INSTALL program or edit your AUTOEXEC.BAT file. Refer to the section entitled "Advanced MCS."

Change Working Set

When you installed the Print Translate Utility, you selected a working set of character set translations. This file contains the translations that you use on a regular basis.

If you want to change the working set, do one of the following procedures. Both procedures remove the previous working set, and replace it with translations you select.

PROCEDURE 1. Run the INSTALL program as described in the section entitled "Installing MCS Utilities."

OR

PROCEDURE 2. Use the PICKTBL command to change the working set. Follow these steps:

1. Copy the following files from *d:\usr\lib\dos\utility\mcs* to the directory where MCS is installed (probably *c:*):

   ```
   PICKTBL.EXE
   PTRANALL.TBL
   ```

2. Change the current drive to the drive where MCS is installed (probably drive C:).

3. Type the PICKTBL command with the same format as this example:

   ```
   PICKTBL PTRANALL.TBL PRNTRAN.TBL
   ```

4. Follow the messages on your screen to change the working set of translations. If you want to keep the translations you selected during INSTALL, make sure you select those translations now!

Advanced MCS

This section contains information to provide the best possible use of MCS. Most of the procedures described in this section are for advanced users, or users who are willing to experiment with the MCS options. You should be familiar with the ASCII table and advanced MS-DOS commands.

This section explains how to:

- Correct printing problems that could occur with the Print Translate Utility and the Print Screen Utility
- Select a Video Mode for the Print Screen Utility
- Edit the AUTOEXEC.BAT file to permanently change MCS options and permanently add a device to the Print Translate Utility
- Use MCS on a device with an installable device driver
- Make a batch file to configure the MCS options to a specific application
- Change Print Translate Utility from a port to an MS-DOS logical device on a Local Printer.
- Change the Printer Control Mode for the Print Translate Utility

Correcting Printing Problems For the Print Screen Utility

In most cases, the default options will provide the correct printed output. If your printed output is not satisfactory, use the following procedures to identify and correct problems.

The Print Screen Utility must be used with an HP PCL printer assigned to LPT1.

To correct the problems identified in this section, you need to adjust the options of the Print Screen Utility. You can temporarily adjust the options in two ways:

- Adjust options during the five second delay
- Adjust options using the PSCREEN command

To permanently change the options, refer to the section "Change MCS Options Permanently" in this section.

To change the video mode with the /M option, see the section entitled "Selecting Video Mode for the Print Screen Utility."

Can't Print From the Screen

If you cannot print from the screen, either the /U option is turned OFF, or your printer is not assigned to LPT1.

- Use the /L option to list the Print Screen configuration to the screen. If the /U option is OFF, turn it ON.
- To use the Print Screen Utility, you must have a printer assigned to LPT1. If your printer is not assigned to LPT1, use the MS-DOS MODE command to redirect LPT1 to your printer's logical device. Refer to the MODE command in the *MS-DOS 3.3 Reference Manual.*

Print Wrong Screen

If you are in the automatic video mode (/MA), the Print Screen Utility may not be able to determine which screen you want to print. You must change the video mode using the /M option.

No Color

If you have a color printer, but it does not print in color after installing MCS, try one of these suggestions:

- The default setting is monochrome. Change the /C option to color (/CC).
- Use the /M option to change the video mode.

Wrong Color

If the color on your screen is different from the color on your printed page, try changing the video mode using the /M option.

Incorrect or Garbled Output

If the data is garbled or part of it is missing, make sure your printer is operating in HP mode (if your printer has several mode selections). Then try changing the video mode using the /M option.

Reversed Background and Foreground Color

Use the /L option to list the Print Screen configuration to the screen. Determine whether the /R option is ON or OFF.

- If ON, your application and the Print Screen Utility are reversing the colors. Turn the /R option OFF.
- If OFF, turn the /R option ON.

Selecting Video Mode for Print Screen Utility

When you installed MCS, the video mode of the Print Screen Utility was set at AUTOMATIC (/MA). This lets the utility scan the video adapter and automatically configure the best printed output. In some cases, the automatic setting does not provide the best printed output. If your printed output is not correct, refer to the section "Correct Printed Output for the Print Screen Utility." If you need to change the video mode, perform the following steps:

1. Follow the instructions below to find the appropriate figure. Figure 6–1, Figure 6–2 and Figure 6–3 show how to select video mode.
   - If you have an Enhanced Graphics Adapter (EGA), use Figure 6–1 to select the video mode.
   - If you have a Color Graphics Adapter (CGA), use Figure 6–2 to select the video mode.
   - If you have a Hercules Monochrome Adapter follow use Figure 6–3 to select the video mode.
2. Type this command to change the mode:

   `PSCREEN /M`*video mode#*
3. Press Return.
4. If your printed output is still not correct, try changing the mode to its text or graphics equivalent.
5. Experiment with the modes until your printed output is correct.

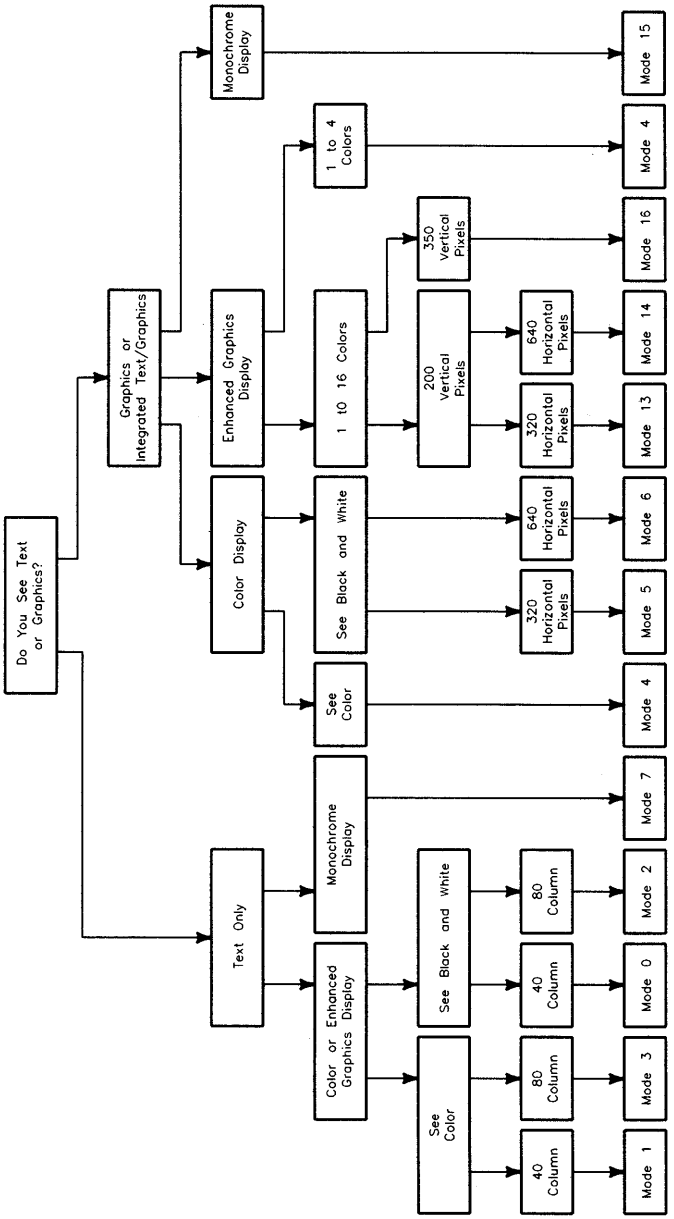


Figure 6–1. Select Video Mode for EGA Adapters.

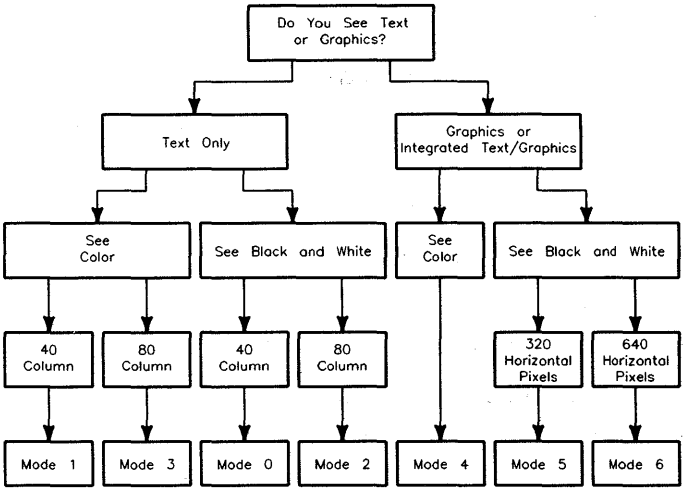


Figure 6-2. Select Video Mode for CGA Adapters.

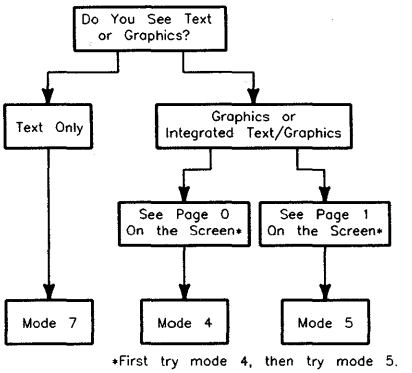


Figure 6-3. Select Video Mode for Hercules Adapter.

Correcting Printing Problems For the Print Translate Utility

In most cases, the installed options will provide the best printed output. If your output is not satisfactory, use the following procedure to identify and correct problems.

Use the Print Translate Utility with an HP PCL Printer or HP Daisywheel printer.

To correct many of the problems identified in the steps below, you need to adjust the options of the Print Translate Utility. To temporarily adjust the options, or add a device, use the PRNTRAN command as described in the section entitled "Using the Print Translate Utility." To permanently change the options or add a device, you can:

- Re-run the INSTALL program
- Refer to "Change MCS Options Permanently."

Follow these steps using the same printer. When you are asked to print a file, use the MS-DOS PRINT command to send data to a printer.

1. Print the file called ASCII.TXT in *d:\usr\lib\dos\utility\mcs*. Does this file print correctly?

    a. If no, check your printer controls and configuration. The problem is not MCS.

    b. If yes, go on to the next step.

2. Run the MCS Test Translation. To do this, refer to the section entitled "Using the Print Translate Utility" to change the working set of translations and select the translation called `Test --> Tran`.

3. To specify the test translation for your printer, enter a PRNTRAN command with the same format as this example. Specify PCL or DW for the /M option (Printer Control Mode) like this example below:

    ```
    PRNTRAN PAR1 /TTest:Tran /MPCL
    ```

4. Print the file ASCII.TXT. Do all the characters appear as asterisks (*******)?

    a. If no, print translation did not occur. Use the /L option to list the Print Translate Utility's configuration to the screen.

    Is the device you use to print shown in the configuration?

    i. If yes, print translation to this particular device may be turned OFF, use the /UON option to turn it ON.

    ii. If no, add the device to the Print Translate Utility.

    b. If yes, the test translation printed correctly. Go on to the next step.

5. Use the /T option to change back to your previous translation. Print the file PC8.TXT from *d:\usr\lib\dos\utility\mcs*. Did the characters print correctly?

    a. If no, the problem is the wrong translation. Note the following:

        i. Make sure the translation you picked is for the exact version of your printer (LaserJet-Y instead of LaserJet). If the exact translation does not work, try a translation with the printer's character set such as PC-8—> Roman8. Most HP Printers have the Roman8 character set.

        ii. MCS may not support the specific cartridge or daisy wheel that your printer is using.

    b. If yes, the problem is your printer control mode. Try this:

        i. If you have a ThinkJet or a QuietJet, make sure it operates in HP Mode.

        ii. Change printer control mode with the /M option.

6. Use an application to send data to the printer. Do the characters print correctly?

    a. If no, then this application may perform its own character set translation. Use the /U option to turn MCS OFF to your device when using this application.

    b. If yes, then this application works well with MCS.

Try all of these suggestions until you reach the correct printed output.

If you do not reach the desired printed output after following these instructions, please contact your local HP Sales Office.

Changing MCS Options Permanently

This section describes how to permanently change the options of the Print Screen Utility and Print Translate Utility or how to add a device to the Print Translate Utility.

When you change an option such as /U or /M using the PSCREEN or PRNTRAN command, these changes last until you restart your system. When you restart your system, the option returns to the default setting or the setting you selected during INSTALL.

You can permanently change the default or installed setting of the option using either of two methods:

- You can run the INSTALL program again. However, some of the PSCREEN options are not available during INSTALL.
- You can edit your AUTOEXEC.BAT file to include the option settings you want.

Here are some examples of how you would edit your AUTOEXEC.BAT file.

- If you want to permanently change the Print Screen Utility video mode to 5, you edit the PSCREEN command to appear like this:

```
PSCREEN /DThinkJet /M5
```

- If you want to permanently change the Print Translate Utility translation to PC-8—>ThinkJet, you edit the PRNTRAN line to appear like this:

```
PRNTRAN PAR1 /TPC-8:ThinkJet /UON
```

- If you want to add a device to the Print Translate Utility, add a line to your AUTOEXEC.BAT file with the same format as this example:

```
PRNTRAN PAR2 /TPC-8:LaserJet /UON
```

Restart your system to activate the option changes. Now these options are permanently changed.

Using MCS in Batch Files to Configure Specific Applications

When using MCS with different applications, you may need a different MCS configuration for a specific application. To do this, you can create a batch file.

For example, if Application A performs it own character set translations, you want to turn off the Print Translate Utility while using Application A.

To do this, make a batch file to:

1. Turn OFF character set translation to your printer before starting Application A.
2. Run Application A.
3. Turn ON character set translation to your printer after Application A is finished.

You can create as many batch files as you need. Here are some other examples of when you might need to create a batch file:

- When using Application B, you may want the Print Screen Utility to only allow printing in the landscape position.
- When using Application C, you may want the Print Screen Utility to stop reversal of the foreground and background color.
- When using Application D, you may want to use a different print translation to translate character sets.

See the *MS-DOS 3.3 Reference Manual* for information on batch files.

Changing a Port to an MS-DOS Logical Device

This procedure is for the Print Translate Utility with a Local Printer.

When you installed the Print Translate Utility, we recommended that you select a parallel or serial port as a device. The device is a connection point between the computer and printer where the Print Translate Utility translates the characters. The device can be a parallel or serial port, an MS-DOS logical device, or a user-defined device.

We recommended that you select a port because most applications route data through the port when sending data to the printer. A few applications bypass the port.

If your printed output is not satisfactory, your application may bypass the port where the characters are translated.

To change the device from a port to an MS-DOS device, follow these steps. Do these steps only if you are making changes after installing MCS.

1. Make sure your current drive is at the drive containing the MCS Utilities.
2. Enter this command to see your configuration for the port:

```
PRNTRAN /L
```

3. Your configuration looks similar to this example:

```
PAR1

TRANSLATION ON/OFF        ON
TRANSLATION TABLE         PC-8  -->  LASERJET
PRINTER CONTROL MODE      PCL
```

4. To remove the port, (PAR1 stands for Parallel Port 1 in this example) enter this command:

```
PRNTRAN PAR1 /R
```

5. To reconfigure the device with a MS-DOS device instead of a port, enter a command with the same format as this example command:

```
PRNTRAN MS-DOS device /UON /TPC8:LASERJET /MPCL
```

   Where *MS-DOS device* is:

   - LPT1 for Parallel Port 1, LPT2 for Parallel Port 2, etc.
   - COM1 for Serial Port 1, COM2 for Serial Port 2, etc.

   The Print Translate Utility now translates characters as text is sent through the MS-DOS device on its way to the printer.

6. Run your application. If the printed output is still unsatisfactory, see the section "Correct Printing Problems for the Print Translate Utility" for more suggestions.

Note Some applications bypass both the port and the MS-DOS logical devices. Print translation will not occur when using these applications.

Change the Printer Control Mode of the Print Translate Utility

The printer control mode is the specific set of escape sequences and control codes used by a printer. In most cases, your correct printer control mode was automatically set by the Print Translation table.

This automatic mode setting should work in most applications. Use the PRNTRAN command with /M option to change the printer control mode *only* when your printed output is not correct.

1. The /MPCL or /MDW Option specifies the printer control mode of your printer. Use one of these options if:

    a. The printer control mode is not automatically chosen.

    b. You want to change the installed printer control mode.

    For a printer such as the
    ThinkJet Family
    LaserJet Family
    QuietJet Family
    PaintJet Family
    or 2602 Daisywheel,

    type:

    PRNTRAN *device* **/MPCL** Return

    For a printer such as the 2601 or 2603 Daisywheel Printer, type:

    * **PRNTRAN** *device* **/MDW** Return

2. The /MDEFAULT option returns to the default printer control mode. Use this option if:

    a. You changed the printer control mode and want to change back to the default mode. Type:

    PRNTRAN *device* **/MDEFAULT** Return

    b. You changed the translation and want to coordinate the printer control mode to the new translation. Type:

    PRNTRAN *device* **/T***src*:*dest* **/MDEFAULT** Return

Your printed output should now be correct.

MCS Messages

How to Interpret Messages

1. Look up the text of the message.
2. Read the cause section.
3. Take the action specified in the remedy section.

Error - /*X* option is needed (FILETRAN)

Cause: You did not specify an option, such as /T for translation, that is needed to execute the command.

Remedy: Retype the command, specifying the needed option.

Error - /*X* is an unknown option (parameter) (FILETRAN, PSCREEN, PRNTRAN)

Cause: You specified an invalid option in the command line.

Remedy: Retype the command with a valid option.

Error - /*X* option entered more than once (FILETRAN, PSCREEN, PRNTRAN)

Cause: You specified the same option more than once in the command line.

Remedy: Retype command with the option specified only once.

Error - /*X* option is incomplete. (FILETRAN, PRNTRAN)

Cause: You did not supply all the information that is needed for this option, but the information you did supply is correct.

Remedy: Retype the command, supplying all the needed information.

Error - /*X* option was used incorrectly. (FILETRAN, PRNTRAN)

Cause: You typed the wrong information following an option.

Remedy: Retype the command with the correct information following the option.

Error - An incorrect combination of options was entered (FILETRAN, PRNTRAN)

Cause: You typed two or more options that cannot be included in the same command.

Remedy: Select which option you want to use and retype the command.

Cannot access drive (INSTALL)

Cause: You entered a drive designator that does not exist.

Remedy: Retype the INSTALL command, using the drive and path (path is optional) where you want to install MCS.

Cannot copy file *filename* (INSTALL)

Cause: INSTALL cannot locate the file needed to receive copies of MCS files necessary for installation.

Remedy: Check the drive and path of the file. Re-enter the filename.

Cannot create directory (INSTALL)

Cause: You cannot install MCS into the location you specified. Possible causes are: disk is full, root directory is full, drive does not exist, disk drive door is open, disk is bad, disk is write-protected, disk is unformatted, directory is read-only, or a file with the same name as the directory name you specified already exists.

Remedy: Check possible causes. Provide remedy or select a new location to install MCS. Retype the INSTALL command.

Cannot find file *filename* (INSTALL)

Cause: The file necessary to complete installing the current utility cannot be found in *d:\usr\lib\dos\utility\mcs*.

Remedy: Make sure you are accessing the correct directory.

Error - Cannot open file: *filename* (INSTALL, PICKTBL)

Cause: The working set of translations cannot be created. Possible causes are: disk is full, root directory is full, drive does not exist, disk drive door is open, disk is bad, disk is write-protected, disk is unformatted.

Remedy: Press [ESC]. Check possible causes and provide remedy. Re-run the INSTALL program or retype the PICKTBL Command.

Error - The destination disc is full (FILETRAN)

Cause: The destination disk does not have enough room to save the destination file.

Remedy: Erase unneeded files from the destination disk or choose another disk as the destination disk.

Error - Destination file name cannot be same as the source file name (PICKTBL)

Cause: You specified the same name for both the source and the destination file.

Remedy: Retype the PICKTBL command, using a different name for the destination file.

Error - The device name entered was not found. (PRNTRAN)

Cause: You entered the wrong device name. The device can be a parallel port, serial port or MS-DOS logical device that your printer is assigned to.

Remedy: Retype the PRNTRAN command, entering the parallel port, serial port, or MS-DOS logical device that you assigned to your printer during INSTALL. (If you can't remember, use the PRNTRAN /L command to list the device your printer is assigned to).

Error - Device name option is needed (PRNTRAN)

Cause: You did not include the device in the PRNTRAN command. The device is the parallel port, serial port, or MS-DOS logical device name that your printer is assigned to.

Remedy: Retype the PRNTRAN command, including the device.

Error - Device name option was used incorrectly (PRNTRAN)

Cause: You entered the wrong device name in the PRNTRAN command.

Remedy: Use the PRNTRAN /L command to check which device is assigned to your printer. Retype the PRNTRAN command, entering the correct device.

Error - FILETRAN is unable to continue (FILETRAN)

Cause: A rare or unspecified error occurs.

Remedy: Check the spelling of the filenames, and whether you have the source and destination disk in the proper drives. Retype the FILETRAN command.

Error - File too large (FILETRAN)

Cause: The destination file is too large to be saved on the destination disk.

Remedy: Remove unneeded files from the destination disk or select another destination disk.

Error - File not Found (FILETRAN)

Cause: FILETRAN cannot find the source file on the specified disk.

Remedy: Use MS-DOS DIR command to check if file is on the specified disk. Retype the command, including a path to the subdirectory, if needed.

Invalid file format (INSTALL, PICKTBL)

Cause: The master set of translations is invalid, damaged, or too large.

Remedy: Reinstall the PTRANALL.TBL file into the */usr/lib/dos/utility/mcs* directory

Invalid Drive/Path: *drive/path* (INSTALL)

Cause: A colon (:) was not entered after the drive, or you entered the wrong syntax.

Remedy: Retype the INSTALL command, entering the drive and path where you plan to install MCS.

MCS installation may not be complete - MCS must be reinstalled (INSTALL)

Cause: You quit INSTALL by pressing [ESC] or when another error occurs.

Remedy: Type INSTALL and press [Return] to begin the INSTALL program.

MCS was not installed (INSTALL)

Cause: You did not select any of the MCS Utilities during the INSTALL program.

Remedy: Type INSTALL and press [Return] to begin the INSTALL program.

Error - No more print translations can be added (PRNTRAN)

Cause: You tried to add another device and the maximum of four devices is already installed.

Remedy: Remove another device using the PRNTRAN /R command. Then you can add this device.

No Room on Disc for Destination File (PICKTBL)

Cause: The disk is full.

Remedy: Remove files from this disk or use another disk.

Error - Not enough room to run FILETRAN (FILETRAN)

Cause: There is not enough resident memory to run the FILETRAN command.

Remedy: Remove unnecessary programs from resident memory

Number out of range (INSTALL)

Cause: You typed a number beyond the number of items listed on the screen.

Remedy: Select a number representing the items listed on the screen.

Out of memory (INSTALL, PICKTBL)

Cause: There is not enough resident memory to read in the translation tables.

Remedy: Press [ESC] to quit the INSTALL or PICKTBL program. Remove unnecessary programs from resident memory and re-run INSTALL or PICKTBL.

Parameter /*X* invalid (PSCREEN)

Cause: You typed a PSCREEN option incorrectly. The message also displays the correct settings for the option.

Remedy: Retype the command, specifying the option correctly.

Error - Reading file (FILETRAN)

Cause: FILETRAN cannot read the source file from the specified disk.

Remedy: Check disk. Try to copy the source file to another disk. Insert the new disk in the specified drive and retype the FILETRAN command.

Error - Too many open files (FILETRAN)

Cause: An application uses too many files so that FILETRAN cannot run.

Remedy: Run FILETRAN from MS-DOS or edit your CONFIG.SYS file to read FILES = 30.

Error - The Translation Table entered is not available (FILETRAN)

Cause: You specified a translation that is not in the Available File Translation Tables.

Remedy: Type FILETRAN /L and press [Return] to list the Available File Translation Tables. Retype the FILETRAN command, specifying a translation from this table.

You must specify a valid drive and path (INSTALL)

Cause: You specified the wrong drive or path.

Remedy: Specify the correct drive and path (the path is optional).

Error - Writing File (FILETRAN)

Cause: FILETRAN cannot save the translated destination file on the specified disk.

Remedy: Insert another disk in the specified destination drive. Retype the FILETRAN command.

A

Providing Native Language Support

This appendix explains how to provide support for a particular language. To provide language support, you need to coordinate three things: Country Codes, Keyboard Codes, and Code Pages. You coordinate these things in two files: CONFIG.SYS and the AUTOEXEC.BAT file that runs when you start up DOS.

To provide a focus, the section includes two examples that use the German and Canadian French languages. But the principles apply across languages. If you have a different language, study the examples and make appropriate adjustments in the codes.

Seeing the Overall Task

Before you try to provide for language support, take a moment to review the information related to the following commands. (It is a good idea to study the syntax for the commands while you examine the examples provided on the facing page so you can make appropriate entries in your CONFIG.SYS and AUTOEXEC.BAT files.)

COUNTRY	*Appendix B* in the *MS-DOS 3.3 Reference Manual* lists the 3-digit code numbers for countries (for example, 049 applies to Germany).
MODE	You need the MODE CODEPAGE PREPARE command. Chapter 2 in the *MS-DOS 3.3 Reference Manual* discusses this command. There, you can find details about preparing code pages (for example, you use *ega.cpi* to prepare a code page for EGA displays).
KEYB	Chapter 2 in the reference manual discusses this command. There, you find details about the keyboard codes (for example, you use *CF* to designate a Canadian French keyboard).
NLSFUNC	Chapter 2 in the reference manual discusses this command. There, you see that the command provides extended country information and lets you subsequently use the CHCP command.
CHCP	Chapter 2 in the reference manual discusses this command. There, you find details about providing a code page (for example, you use *850* to designate a multilingual code page).

You can use the examples with any emulated display, but you could get the following error messages:

```
CON code page driver cannot be initialized
Codepage operation not supported on this device
```

You can safely ignore the messages, but you may want to consider an alternative. If you do not plan to use the EGA display emulation, you can use only the lines beginning with *keyb* and *country*. By doing this, you will not get the messages.

Setting Up Language Support

This section has two examples that show how to provide language support. By studying the examples and the reference information for the indicated commands, you can make adjustments for your country according to devices, codes, and so on.

Providing Support for Germany

1. Edit your AUTOEXEC.BAT file for DOS, adding the following lines after the line for PATH:

```
mode con cp prepare=((437,850) ega.cpi)
keyb gr
nlsfunc
chcp 850
```

2. Edit your CONFIG.SYS file, adding the following lines:

```
country=049
device=display.sys con=(ega,437,2)
```

Providing Support for Canadian French

1. Edit your AUTOEXEC.BAT file for DOS, adding the following lines after the line for PATH:

```
mode con cp prepare=((850,863) ega.cpi)
keyb cf
nlsfunc
chcp 863
```

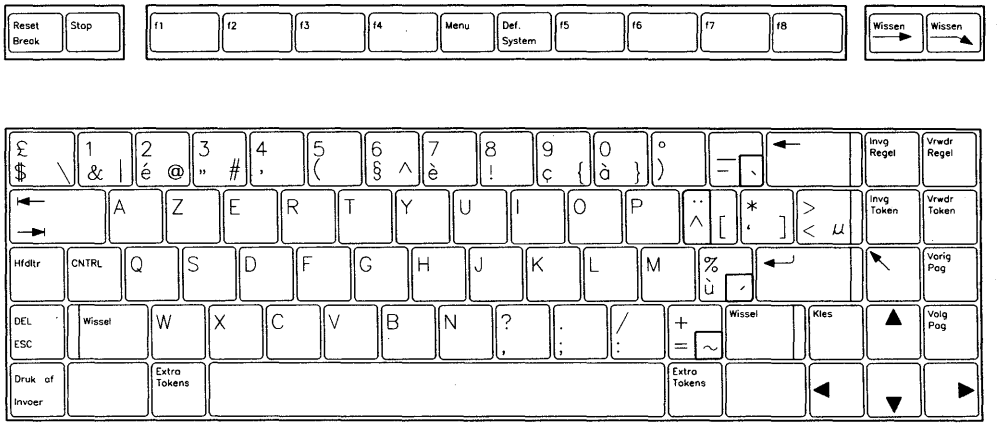
2. Edit your CONFIG.SYS file, adding the following lines:

```
country=002
device=display.sys con:=(ega,,2)
```

Native Language Keyboards

The remainder of this appendix describes how HP's native language keyboards are used with the SoftPC under X11.

Belgian (BE)

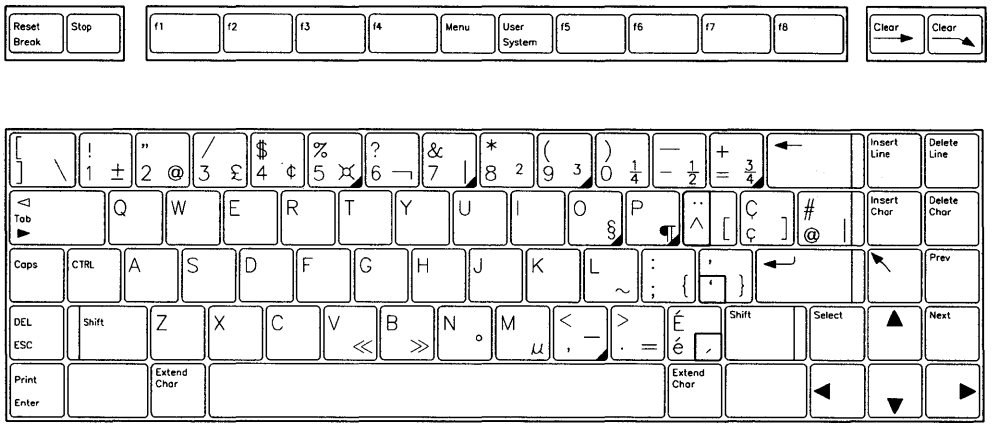


Codepages: 437, 850

- 3rd Shift = Alt-CTRL

Mute (dead) keys, shown enclosed in a box, produce no output until a second key is pressed.

Canadian, English (CE)



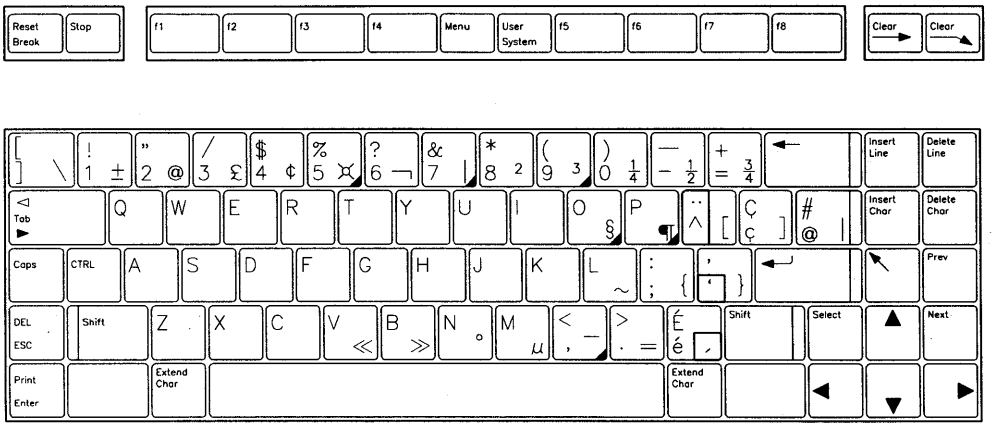
Codepages: 850, 863

- 3rd Shift = Alt-Shift

Keys which may be affected by codepage selection are indicated by triangular darts near the symbol.

Mute (dead) keys, shown enclosed in a box, produce no output until a second key is pressed.

Canadian, French (CF)



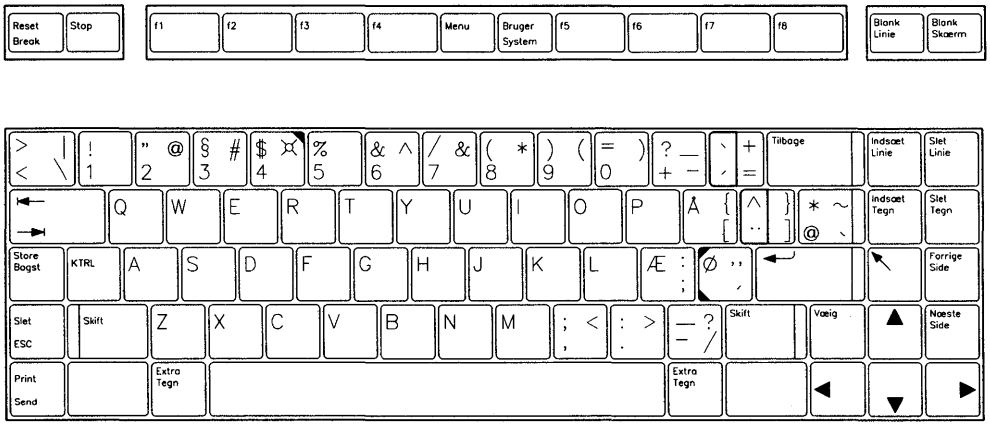
Codepages: 850, 863

- 3rd Shift = Alt-Shift

Keys which may be affected by codepage selection are indicated by triangular darts near the symbol.

Mute (dead) keys, shown enclosed in a box, produce no output until a second key is pressed.

Danish (DK)



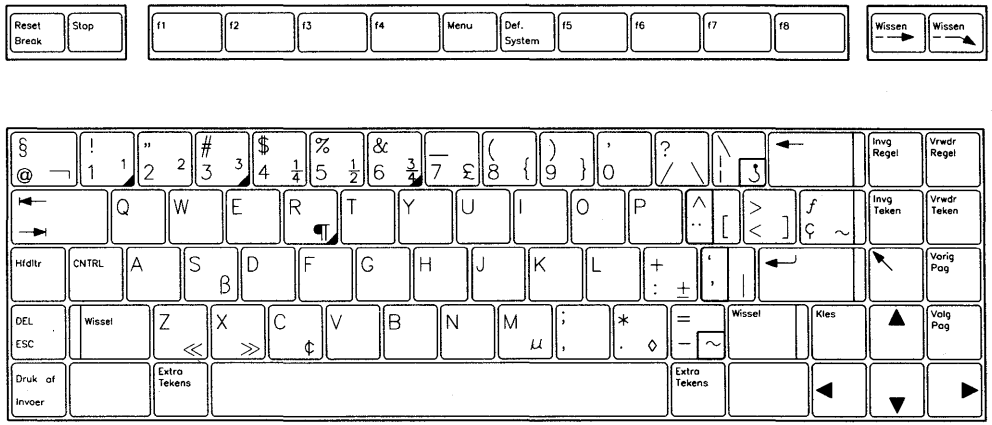
Codepages: 850, 865

- 3rd Shift = [Alt]
- 4th Shift = [Alt]-[Shift]

Keys which may be affected by codepage selection are indicated by triangular darts near the symbol.

Mute (dead) keys, shown enclosed in a box, produce no output until a second key is pressed.

Dutch (DT)



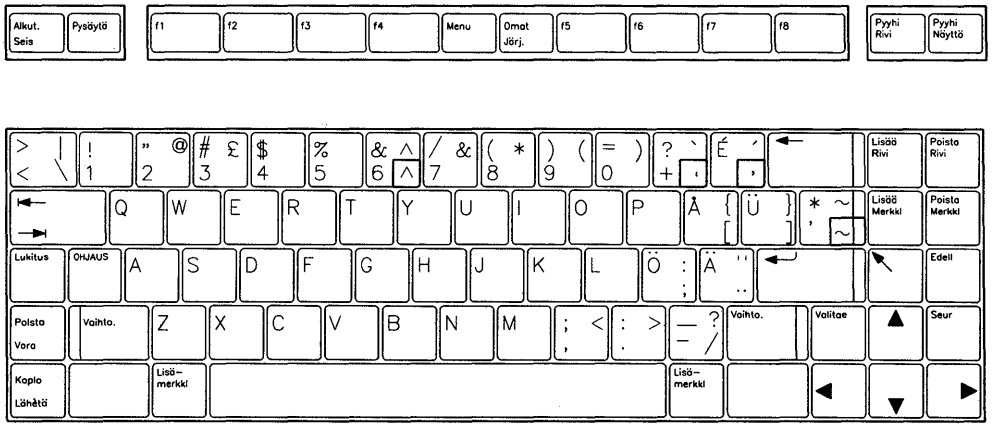
Codepages: 437, 850

- 3rd Shift = Alt-CTRL

Keys which may be affected by codepage selection are indicated by triangular darts near the symbol.

Mute (dead) keys, shown enclosed in a box, produce no output until a second key is pressed.

Finnish (SU)

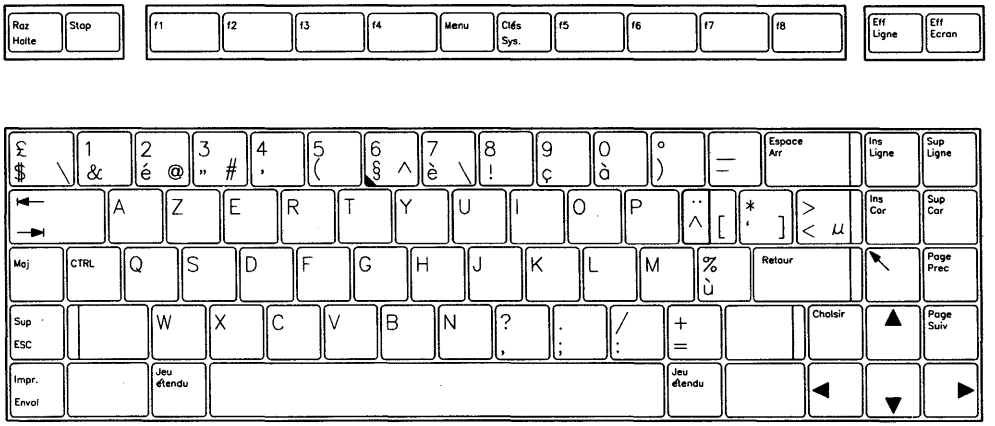


Codepages: 437, 850

- 3rd Shift = [Alt]
- 4th Shift = [Alt]-[Shift]

Mute (dead) keys, shown enclosed in a box, produce no output until a second key is pressed.

French (FR)



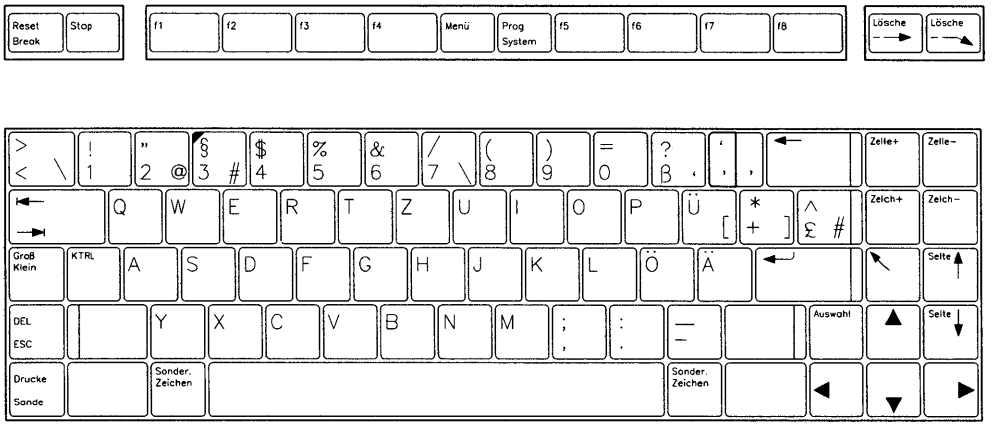
Codepages: 437, 850

- 3rd Shift = Alt-CTRL

Keys which may be affected by codepage selection are indicated by triangular darts near the symbol.

Mute (dead) keys, shown enclosed in a box, produce no output until a second key is pressed.

German (GR)



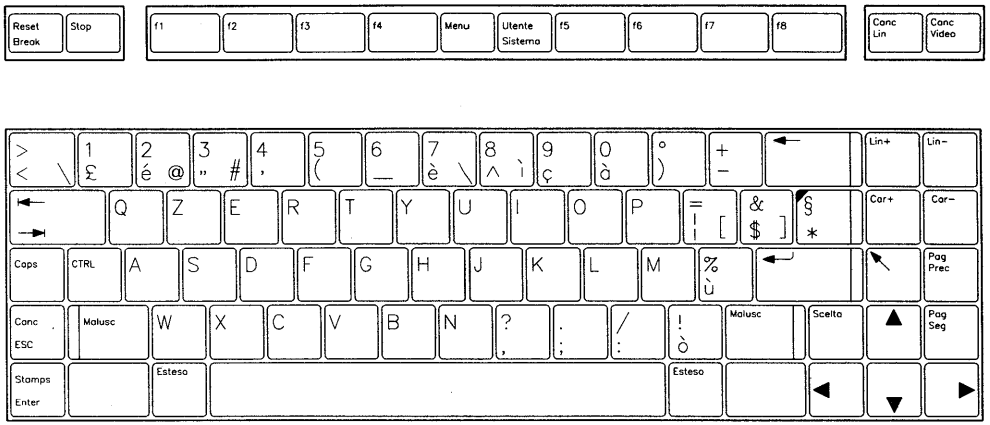
Codepages: 437, 850

- 3rd Shift = Alt-CTRL

Keys which may be affected by codepage selection are indicated by triangular darts near the symbol.

Mute (dead) keys, shown enclosed in a box, produce no output until a second key is pressed.

Italian (IT)

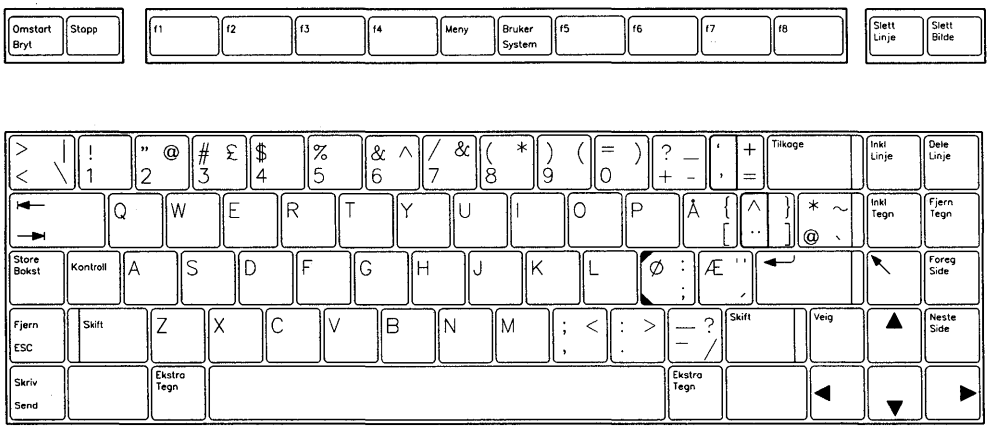


Codepages: 437, 850

- 3rd Shift = Alt-CTRL

Keys which may be affected by codepage selection are indicated by triangular darts near the symbol.

Norwegian (NO)



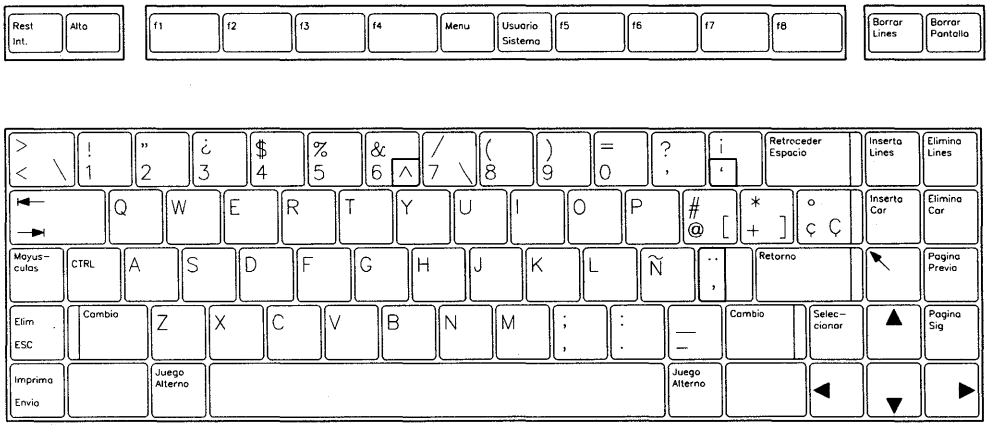
Codepages: 850, 865

- 3rd Shift = [Alt]
- 4th Shift = [Alt]-[Shift]

Keys which may be affected by codepage selection are indicated by triangular darts near the symbol.

Mute (dead) keys, shown enclosed in a box, produce no output until a second key is pressed.

Spanish, European (SP)

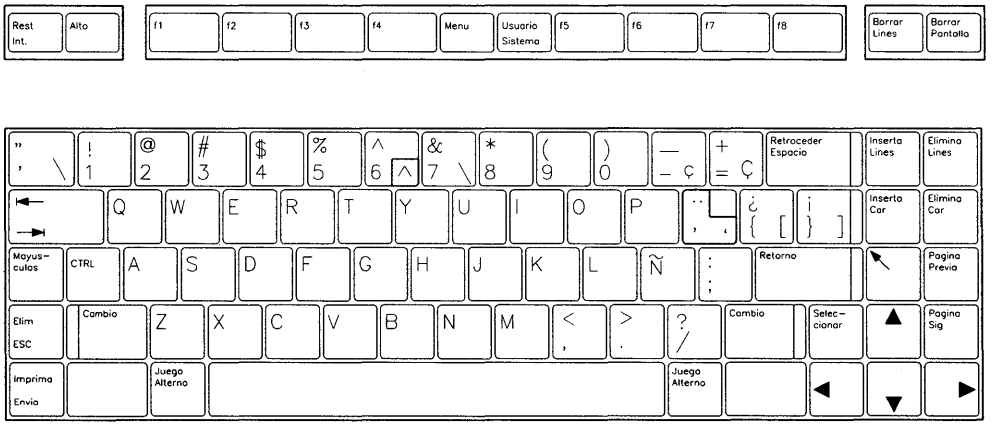


Codepages: 437, 850

- 3rd Shift = Alt-CTRL

Mute (dead) keys, shown enclosed in a box, produce no output until a second key is pressed.

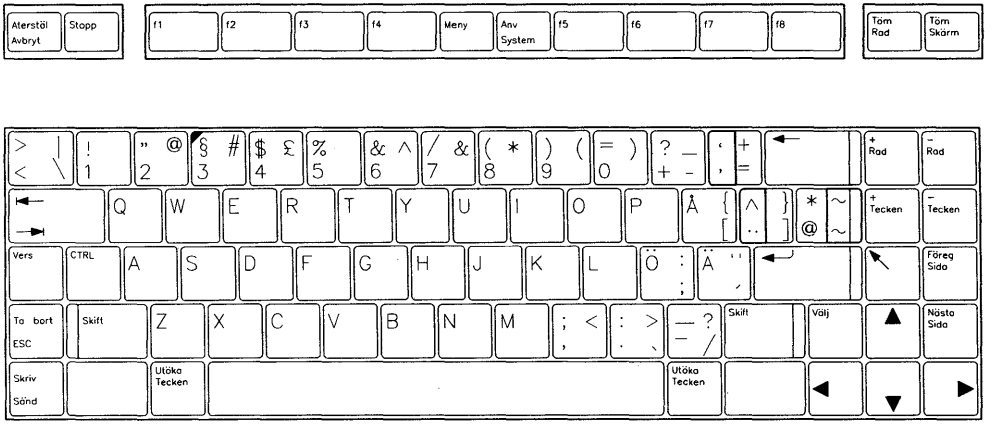
Spanish, Latin (LS)



- 3rd Shift = Alt-CTRL

Mute (dead) keys, shown enclosed in a box, produce no output until a second key is pressed.

Swedish (SV)



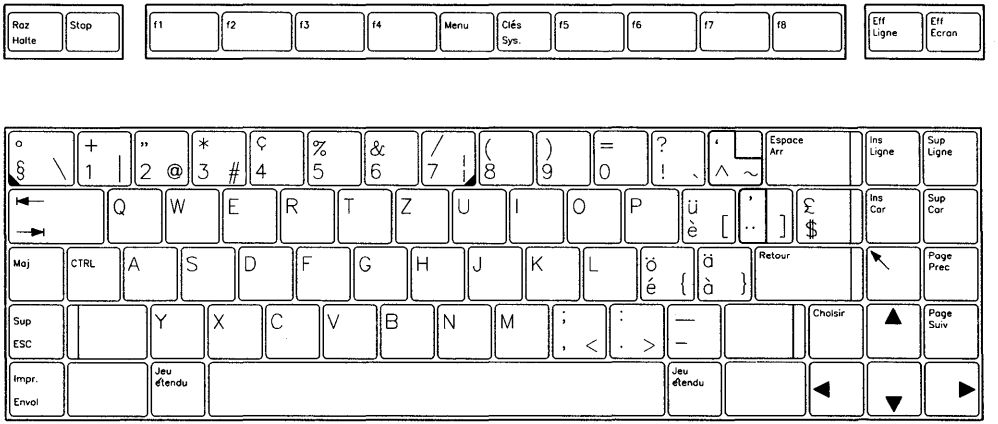
Codepages: 437, 850

- 3rd Shift = Alt
- 4th Shift = Alt-Shift

Keys which may be affected by codepage selection are indicated by triangular darts near the symbol.

Mute (dead) keys, shown enclosed in a box, produce no output until a second key is pressed.

Swiss, French (SF)



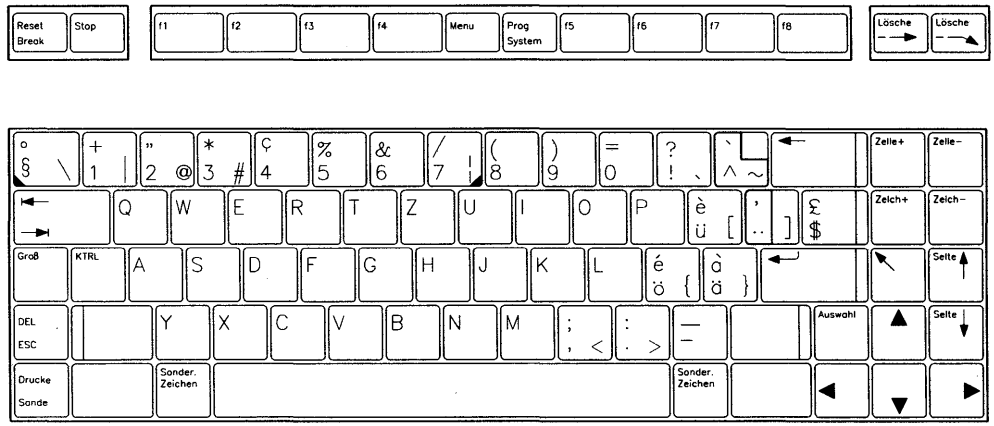
Codepages: 437, 850

- 3rd Shift = Alt-CTRL

Keys which may be affected by codepage selection are indicated by triangular darts near the symbol.

Mute (dead) keys, shown enclosed in a box, produce no output until a second key is pressed.

Swiss, German (SD)



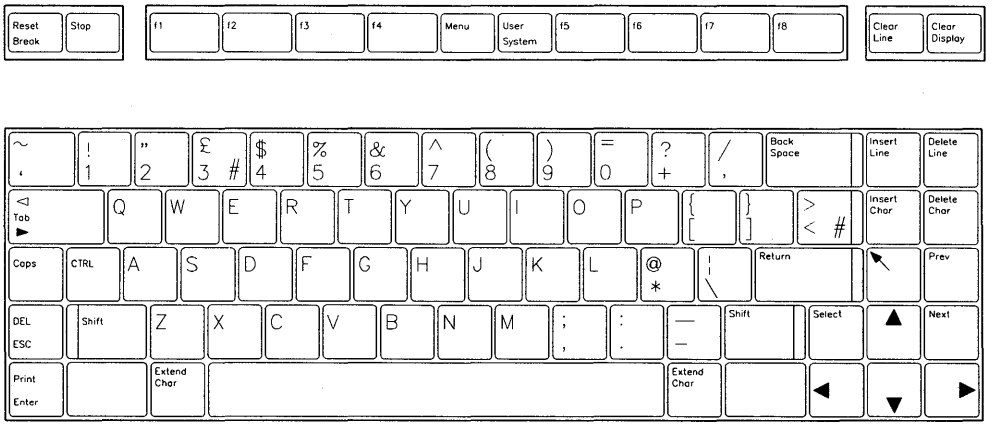
Codepages: 437, 850

- 3rd Shift = Alt-CTRL

Keys which may be affected by codepage selection are indicated by triangular darts near the symbol.

Mute (dead) keys, shown enclosed in a box, produce no output until a second key is pressed.

United Kingdom (UK)



Codepages: 437, 850

- 3rd Shift = Alt-CTRL

B

HP-UX Commands

This appendix contains reference information about HP-UX commands that help you use the SoftPC more effectively. The entries are arranged alphabetically, each starting on its own "page 1."

MAN Pages

cphd(1)	dosls(1), dosll(1)
dos2ux(1), ux2dos(1)	dosmkdir(1)
doschmod(1)	dosrm(1), dosrmdir(1)
doscp(1)	mkhd(1)
dosdf(1)	spc(1)
dosif(4)	spcterm(1)

NAME

cphd - copy an emulated hard disk for SoftPC

SYNOPSIS

cphd *file1 target*

DESCRIPTION

Cphd copies an emulated hard disk file. Because *cphd* retains the sparse file structure of a SoftPC hard disk file, it should be used instead of *cp*.

File1 is copied to *target*. *File1* and *target* must be regular files. *Target* cannot be a directory.

EXAMPLES

The following command copies the hard disk file *sourcedisk* to *targetdisk* in the same directory.

cphd sourcedisk targetdisk

NOTES

Cphd copies any regular file and does not distinguish an emulated hard disk.

SEE ALSO

mkhd(1), spc(1), spcterm(1).

NAME

mkhd - make an emulated hard disk for SoftPC

SYNOPSIS

mkhd *file size*

DESCRIPTION

Mkhd creates an emulated hard disk file that is usable by SoftPC.

File is created with a size value of *size*. *File* must not already exist. *Size* must be within the range 1 to 32, expressed in units of approximately one megabyte.

EXAMPLES

The following command makes a hard disk file named *my_disk* of approximately 20 Mbytes.

mkhd my_disk 20

SEE ALSO

cphd(1), spc(1), spcterm(1).

NAME

dos2ux, ux2dos – convert ASCII file format

SYNOPSIS

dos2ux *file ...*
ux2dos *file ...*

DESCRIPTION

Dos2ux and *ux2dos* read each specified *file* in sequence and write it to standard output, converting to HP-UX format or to DOS format, respectively. Each *file* can be either DOS format or HP-UX format for either command.

A DOS file name is recognized by the presence of an embedded colon (:) delimiter; see *dosif*(4) for DOS file naming conventions.

If no input file is given or if the argument – is encountered, *dos2ux* and *ux2dos* read from standard input. Standard input can be combined with other files.

EXAMPLES

The following prints file **myfile** on the display:

dos2ux myfile

The following converts **file1** and **file2** to DOS format, then concatenates them together, placing them in **file3**.

ux2dos file1 file2 > file3

RETURN VALUE

Both commands return **0** if successful or **2** if the command failed. The only possible failure is the inability to open a specified file, in which case the commands print a warning.

WARNINGS

Command formats resembling:

dos2ux file1 file2 > file1

overwrite the data in **file1** before the concatenation begins, causing a loss of the contents of **file1**. Therefore, be careful when using shell special characters.

SEE ALSO

doschmod(1), doscp(1), dosdf(1), dosls(1), dosmkdir(1), dosrm(1), dosif(4).

NAME

doschmod – change attributes of a DOS file

SYNOPSIS

doschmod [**–u**] *mode device:file ...*

DESCRIPTION

Doschmod is the DOS counterpart of *chmod*(1).

There is one option:

–u Disable argument case conversion. In the absence of this option, all DOS file names are converted to upper case.

A DOS file name is recognized by the presence of an embedded colon (:) delimiter; see *dosif*(4) for DOS file naming conventions.

The attributes of each named file are changed according to *mode*, which is an octal number in the range 000 to 0377. *Mode* is constructed from the logical OR of the following modes:

200	Reserved. Do not use.
100	Reserved. Do not use.
040	Archive. Set whenever the file has been written to and closed.
020	Directory. Do not modify.
010	Volume Label. Do not modify.
004	System file. Marks files that are part of the DOS operating system.
002	Hidden file. Marks files that do not appear in a DOS directory listing using the DOS DIR command.
001	Read-Only file. Marks files as read-only.

SPECIAL WARNING

Specifying inappropriate *mode* values can make files and/or directories inaccessible, and in certain cases can damage the file system. To prevent such problems, do not change the mode of directories and volume labels.

Normal users should have no need to use *mode* bits other than 001, 002, and 040.

EXAMPLES

The following marks file **/dev/rfd9122:memo.txt** as a hidden file:

doschmod 002 /dev/rfd9122:memo.txt

The following marks file **driveC:autoexec.bat** read-only:

doschmod 001 driveC:autoexec.bat

SEE ALSO

chmod(1), dos2ux(1), doscp(1), dosdf(1), dosls(1), dosmkdir(1), dosrm(1), chmod(2), dosif(4).

NAME

doscp – copy to or from DOS files

SYNOPSIS

doscp [–**fvu**] *file1 file2*
doscp [–**fvu**] *file1* [*file2* ...] *directory*

DESCRIPTION

Doscp is the DOS counterpart of *cp*(1). *Doscp* copies a DOS file to a DOS or HP-UX file, an HP-UX file to an HP-UX or DOS file, or HP-UX or DOS files to an HP-UX or DOS directory. The last name in the argument list is the destination file or directory.

A DOS file name is recognized by the presence of an embedded colon (**:**) delimiter; see *dosif*(4) for DOS file naming conventions.

The file name – (dash) is interpreted to mean standard input or standard output depending upon its position in the argument list.

Options

There are several options:

–f Unconditionally write over an existing file. In the absence of this option, *doscp* asks permission to overwrite an existing HP-UX file.

–v Verbose mode. *Doscp* prints the source name.

–u Disable argument case conversion. In the absence of this option, all DOS file names are converted to upper case.

Note: Shell metacharacters (*, **?**, and **[...]**) can be used when specifying HP-UX file names, but cannot be used when specifying a DOS file name, because file name expansion is done by the shell and the DOS utilities do not recognize metacharacters.

RETURN VALUE

Doscp returns 0 if all files are copied successfully. Otherwise, it prints a message to standard error and returns with a non-zero value.

EXAMPLES

Copy the files in the HP-UX directory **abc** to the DOS volume stored as HP-UX file **hard_disk**:

doscp abc/* hard_disk:

Copy DOS file **/backup/log** through the HP-UX special file **/dev/rfd9127** to HP-UX file **logcopy** located in the current directory:

doscp /dev/rfd9127:/backup/log logcopy

Copy DOS file **zulu** on the volume stored as HP-UX file **bb** to standard output:

doscp bb:zulu –

SEE ALSO

cp(1), dos2ux(1), doschmod(1), dosdf(1), dosls(1), dosmkdir(1), dosrm(1), dosif(4).

NAME

dosdf – report number of free disk clusters

SYNOPSIS

dosdf *device*[:]

DESCRIPTION

Dosdf is the DOS counterpart of *df*(1). It prints the cluster size in bytes and the number of free clusters on the specified DOS volume.

SEE ALSO

df(1), dos2ux(1), doschmod(1), doscp(1), dosls(1), dosmkdir(1), dosrm(1), dosif(4).

NAME

dosls, dosll – list contents of DOS directories

SYNOPSIS

dosls [**–aAudl**] *device*:[*file*]
dosll [**–aAudl**] *device*:[*file*]

DESCRIPTION

Dosls is the DOS counterpart of *ls*(1).

For each directory named, *dosls* lists the contents of that directory. For each file named, *dosls* repeats its name and any other information requested. If invoked by the name *dosll*, the **–l** option is implied.

Options

There are several options:

–a List all directory entries. In the absence of this option, hidden files, system files, and files whose names begin with a dot (**.**) are not listed.

–A Same as **–a**, except the current directory and the parent directory are not listed. For the superuser, this option defaults to being set, and is disabled by **–A**.

–u Disable argument case conversion. In the absence of this option, all DOS file names are converted to uppercase.

–d If an argument is a directory, list only its name. Often used with **–l** to get the status of a directory.

–l List in long format, giving file attribute, size in bytes, and the date and time of last modification for each file, as well as listing the DOS volume label. Long listing is disabled if *dosll* is invoked with the **–l** option.

A DOS file name is recognized by the presence of an embedded colon (**:**) delimiter; see *dosif*(4) for DOS file naming conventions.

EXAMPLES

These examples assume that a DOS directory structure exists on the device accessed through HP-UX special file **/dev/rdsk/0s1**.

The following example lists all of the files in the root directory of the DOS directory structure:

dosls –a /dev/rdsk/0s1:

The following example produces a long-format listing of all the information about the DOS directory **/dos/math**, but does not list the files in the directory:

dosls –ld /dev/rdsk/0s1:/dos/math

SEE ALSO

dos2ux(1), doschmod(1), doscp(1), dosdf(1), dosmkdir(1), dosrm(1), ls(1), dosif(4).

NAME

dosmkdir – make a DOS directory

SYNOPSIS

dosmkdir [**–u**] *device*:*directory* ...

DESCRIPTION

Dosmkdir is the DOS counterpart of *mkdir*(1). It creates specified directories. The standard entries, **.** for the directory itself and **..** for its parent, are made automatically.

There is one option:

–u Disable argument case conversion. In the absence of this option, all DOS file names are converted to uppercase.

A DOS file name is recognized by the presence of an embedded colon (**:**) delimiter; see *dosif*(4) for DOS file naming conventions.

DIAGNOSTICS

Dosmkdir returns 0 if all directories were successfully created. Otherwise, it prints a message to standard error and returns non-zero.

EXAMPLES

To create an empty subdirectory named **numbers** under the directory **/math/lib** on the device accessed through HP-UX special file **/dev/rfd9122**, use:

dosmkdir /dev/rfd9122:/math/lib/numbers

SEE ALSO

dos2ux(1), doschmod(1), doscp(1), dosdf(1), dosls(1), dosrm(1), mkdir(1), dosif(4).

NAME

dosrm, dosrmdir – remove DOS files or directories

SYNOPSIS

dosrm [–**friu**] *device*:*file* ...
dosrmdir [–**u**] *device*:*file* ...

DESCRIPTION

Dosrm and *dosrmdir* are DOS counterparts of *rm*(1) and *rmdir*(1), respectively.

Dosrm removes the entries for one or more files from a directory. If a specified file is a directory, an error message is printed unless the optional argument –**r** is specified (see below).

Dosrmdir removes entries for the named directories, provided they are empty.

Options

The options are:

–**f** (force) Unconditionally remove the specified file, even if the file is marked read-only.

–**r** Cause *dosrm* to recursively delete the entire contents of a directory, followed by the directory itself. *Dosrm* can recursively delete up to 17 levels of directories.

–**i** (interactive) Cause *dosrm* to ask whether or not to delete each file. If –**r** is also specified, *dosrm* asks whether to examine each directory encountered.

–**u** Disable argument case conversion. In the absence of this option, all DOS file names are converted to uppercase.

A DOS file name is recognized by the presence of an embedded colon (:) delimiter; see *dosif*(4) for DOS file naming conventions.

EXAMPLES

These examples assume that a DOS directory structure exists on the device accessed through the HP-UX special file **/dev/rfd9122**.

This example recursively combs through the DOS directory **/tmp** and asks if each DOS file should be removed (forced, with no file mode checks):

dosrm –irf /dev/rfd9122:/tmp

The following example removes the DOS directory **doug** from the DOS volume stored as HP-UX file **hard_disk**:

dosrmdir hard_disk:doug

SEE ALSO

dos2ux(1), doschmod(1), doscp(1), dosdf(1), dosls(1), dosmkdir(1), rm(1), rmdir(1), dosif(4).

NAME

DOSIF – DOS Interchange Format description

DESCRIPTION

DOSIF (DOS Interchange Format) is the name given to the media format used by the DOS operating system. This format is based upon that used in IBM PC and PC AT, HP Vectra, and HP 150 systems.

The DOS utilities described in Section 1 (referred to hereafter as *dos**(1)) are provided for reading data from and writing data to DOSIF volumes. Use these utilities to retrieve information from a DOSIF volume.

The *dos**(1) utilities are the only HP-UX commands that can interact directly with the contents of a DOSIF volume. The only other way to interact with the contents of a DOSIF volume is to use an HP-UX DOS emulation or coprocessor facility such as SoftPC or the DOS Coprocessor. *Mount*(1) cannot be used on a DOSIF volume because the operating system does not recognize it.

When constructing file names for *dos**(1) commands, start with the HP-UX path name of the DOSIF volume, then add a colon (:) followed by the file name:

device_file : *file*

or

path_name : *file*

Note: This file naming convention is suitable for use only in arguments to the *dos**(1) utilities. It does not constitute a legal path name for any other use in HP-UX.

Note: Shell metacharacters (*, **?**, and **[...]**) can be used to name HP-UX files, but cannot be used when specifying a DOS file name, because file name expansion is done by the shell and the *dos**(1) utilities do not recognize metacharacters.

By convention, if the HP-UX device name and a trailing colon are specified, but no file or directory name is provided (for example, **/dev/rfd.0:**), the root (/) of the DOS file system is assumed.

EXAMPLES

Specify DOSIF file **/dos/ivy** accessed through HP-UX special file **/dev/rfd9127**:

/dev/rfd9127:/dos/ivy

Specify DOSIF file **/math** accessed through the DOS volume stored as HP-UX file **/users/mydir/driveC**:

/users/mydir/driveC:/math

SEE ALSO

dos2ux(1), doschmod(1), doscp(1), dosdf(1), dosls(1), dosmkdir(1), dosrm(1).

NAME

spc - start SoftPC from the X window system

SYNOPSIS

spc [-toolkitoption ...] [-X]

DESCRIPTION

SoftPC is a software emulation of an IBM PC AT-compatible personal computer. It allows direct execution of DOS applications on HP 9000 computers. *Spc* starts SoftPC from the X Window System, Version 11.

Spc first checks the user's home directory for a *.SoftPC* file. If there is no *.SoftPC* there, then the file */usr/lib/SoftPC/.SoftPC* is used as a default. *Spc* will copy a *.SoftPC* file into the user's home directory whenever the SoftPC configuration is changed from the setup menus. To avoid conflicts, an user's *.SoftPC* file should not be edited directly while running *spc*.

Spc will copy a *cmos.ram* file into the user's home directory if the equipment configuration differs from the *.SoftPC* configuration. An user should never attempt to alter the *cmos.ram* file. *Spc* will modify *cmos.ram* on behalf of the user whenever necessary.

OPTIONS

The *spc* program accepts all of the standard X Toolkit command line options along with the additional options listed below.

-X This option forces *spc* to use X11 graphics. By default, Starbase graphics are used if the display is local. If the display is remote, X11 graphics are always used.

The following standard X Toolkit options are commonly used with *spc*. See *X(1)* for a complete list and description.

-display *display*
This option specifies the X server to use.

-geometry *geometry*
This option specifies the location of the *spc* window. Only the X and Y values should be used; width and height (WxH) should not be specified.

-iconic This option indicates that *SoftPC* should be placed on the display in icon form.

X DEFAULTS

The *spc* program understands all of the core X Toolkit resource names and classes. See *X(1)* for more information.

The appearance of the SoftPC main window is governed by the PC video adapter emulation. The following resources affect the appearance of the SoftPC right-hand status area and pop-up menus only.

background (class **Background**)
Specifies the background color of the status area and menus.

borderColor (class **BorderColor**)
Specifies the border color used for the status area and menus.

borderWidth (class **BorderWidth**)
Specifies the border width used for the status area and menus.

font (class **Font**)
Specifies the font for displaying text in the status area and menus.

foreground (class **Foreground**)
Specifies the color for displaying text in the status area and menus.

title (class **Title**)
Specifies the window title for *spc*. This string may be used by the window manager when displaying this application.

POINTER USAGE

Many *spc* functions are performed through the SoftPC main menu. Clicking the middle button (both buttons for a two-button mouse) invokes the SoftPC main menu. Selecting a menu item is done by pointing to the desired menu item and clicking the left button. Removing the main menu item is done by pointing outside the main menu and clicking the left button.

In general, the left hand button is used as the select function.

NOTES

The directory */usr/lib/X11/fonts/misc* should be in the X server font path. See *xset(1)* for instructions on querying and setting the font path.

The SoftPC font files must be installed on the system where *spc* is to be displayed. Otherwise an error will occur when *spc* attempts to load the fonts.

ENVIRONMENT

DISPLAY
To get the default host and display number.

HOME To get the user's home directory.

FILES

/usr/lib/SoftPC/.SoftPC	Default user configuration
$HOME/.SoftPC	User configuration file
/usr/lib/SoftPC/cmos.ram	Default equipment configuration
$HOME/cmos.ram	User equipment configuration
/usr/lib/SoftPC/term/X11	Keyboard description file
/usr/lib/nls/n-computer/SoftPC.cat	Message catalog
/usr/lib/X11/fonts/misc/spc*	Font files
/usr/lib/dos/utility/help/	On-line information

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ORIGIN

Insignia Solutions, Inc.

SEE ALSO

X(1), xset(1), spcterm(1), cphd(1), *SoftPC Users Guide*.

NAME

spcterm - start SoftPC from a terminal.

SYNOPSIS

spcterm

DESCRIPTION

SoftPC is a software emulation of an IBM PC AT-compatible personal computer. It allows direct execution of DOS applications on HP 9000 computers. *Spcterm* starts SoftPC from selected terminals.

Spcterm first checks the user's home directory for a *.SoftPC* file. If there is no *.SoftPC* there, then the file */usr/lib/SoftPC/.SoftPC* is used as a default.

Spcterm will copy a *cmos.ram* file into the user's home directory if the equipment configuration differs from the *.SoftPC* configuration. An user should never attempt to alter the *cmos.ram* file. *Spcterm* will modify *cmos.ram* on behalf of the user whenever necessary.

Typing "Ctrl-N Esc 1" will exit *spcterm* from HP239x and HP700/9x terminals. To exit *spcterm* from an HP700/44 terminal, press the F12 function key.

RESTRICTIONS

Spcterm runs only on selected terminals: HP2392, HP2393, HP2394, HP2397, HP700/44, HP700/92 and HP700/94.

ENVIRONMENT

TERM To get the terminal type.

HOME To get the user's home directory.

FILES

/usr/lib/SoftPC/.SoftPC	Default user configuration
$HOME/.SoftPC	User configuration file
/usr/lib/SoftPC/cmos.ram	Default equipment configuration
$HOME/cmos.ram	User equipment configuration
/usr/bin/spcterm	Start up script
/usr/lib/SoftPC/term/	Terminal description files
/usr/lib/terminfo/h/hp-pcterm	HP700/44 terminfo file
/usr/lib/nls/n-computer/SoftPC.cat	Message catalog
/usr/lib/dos/utility/help/	On-line information

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ORIGIN

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SEE ALSO

spc(1), mkhd(1), cphd(1), *SoftPC Users Guide*.

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