

This chapter presents details related to creating program information files (PIFs) for non-Windows applications running under Microsoft Windows 3.1.

For information about specific problems related to running non-Windows applications, see Chapter 13, “Troubleshooting Windows 3.1.”

Related information

- *Windows User’s Guide*: Chapter 8, “PIF Editor”; see also the background information on creating program groups in Chapter 3, “Program Manager”
- *Windows Resource Kit*: Chapter 7, “Setting Up Non-Windows Applications”; Part 2, “Configuring Windows 3.1”
- *Glossary terms*: application, expanded memory, extended memory, LIM 3.2 and 4.0, PIF, virtual memory

Contents of this chapter

About Creating PIFs.....	300
About PIF Editor.....	300
The Operating Mode and Basic Parameters.....	300
PIF Settings for Standard Mode.....	301
PIF Settings for 386 Enhanced Mode.....	303
Modifying the Default PIF.....	305
Creating Multiple PIFs for a Single Application.....	306

About Creating PIFs

You must use the PIF Editor to create or modify PIFs. This Windows utility presents dialog boxes in which you can specify options for customizing how Windows runs an application in either standard mode or 386 enhanced mode.

The PIF Editor includes complete context-sensitive help for all dialog box options. When you are using PIF Editor, you can find the information you need to make appropriate choices for each option by pressing F1.

This section provides an overview of the options in PIF Editor in relation to memory management and other issues, and describes briefly how to use PIF Editor to modify _DEFAULT.PIF and how to create multiple PIFs for a single application.

For complete descriptions of PIFs and details about using the PIF Editor, see Chapter 8, “PIF Editor,” in the *Windows User's Guide*.

About PIF Editor

This section briefly reviews the options in PIF Editor.

The Operating Mode and Basic Parameters

Choose Standard or 386 Enhanced from the Mode menu in PIF Editor to specify the operating mode for which you're creating the PIF. Otherwise, PIF Editor shows the settings for the mode under which Windows is currently running.

For either Windows operating mode, you might specify:

- The program filename or batch file to be executed, including filename extension.
- The title you want to appear in the window's title bar and under the icon on the desktop. If this field is blank in PIF Editor, the title bar for the application window will contain the PIF filename with no extension.

- Any switches or other command line information. Type ? in the Optional Parameters box if you want to be prompted for switches each time you run this application.
- The startup directory. If a different working directory is specified for the program-item icon in Program Manager, that setting overrides the Start-Up Directory setting.

For any of these basic parameter fields in PIF Editor, you can specify environment variables defined in AUTOEXEC.BAT by enclosing the variable between % signs. For example, **%worddir%** might specify the environment variable for the Microsoft Word 5.x directory as set in AUTOEXEC.BAT. For details about setting and using environment variables, see your MS-DOS documentation.

PIF Settings for Standard Mode

For running an application under Windows in standard mode, you can specify information about these items to control memory use, system resources, and other behaviors:

- **Video memory settings** specify memory requirements for the display adapted. Select Text if the application doesn't use graphics, because this setting uses the least memory.
- **System memory settings** specify the amount of conventional memory required to run the application. Under the XMS KB Limit option, specify **0** for no extended memory; specify **-1** for no limit if the application uses a large amount of extended memory.

There is no option for expanded memory, because under standard mode, expanded memory must be allocated through an EMS board and driver on an 80286 machine or through an expanded memory manager such as EMM386 on an 80386 machine.

- **Settings for resource sharing** (the Directly Modifies options) prevent applications from using the same serial port simultaneously and prevent switching between ports. Check the Keyboard option to specify that the application has exclusive control of the keyboard, so that Windows cannot switch away from the application. This option also makes more memory available to the application, because Windows doesn't need to save the current state or display settings.

Figure 8.1

PIF Editor for
standard mode

To display this dialog in
386 enhanced mode, choose Standard
from the Mode menu in PIF Editor

The remaining options set flags and reserve shortcut keys to control how the application works in switching back to Windows:

- **No Screen Exchange** prevents copying the screen to the Clipboard with Print Screen. This is the same as reserving the PRTSc and ALT+PRTSc keys.
- **Prevent Program Switch** prevents switching back to Windows to conserve memory. You have to quit the application to return to Windows. This is the same as reserving all shortcut keys or selecting any Directly Modifies option.
- **Close Window On Exit**, if unchecked, keeps the window open when you quit the application until you press a key to return to Windows. This option displays any available messages when you quit.
- **No Save Screen** prevents Windows from updating the screen when you switch back to the application, which saves memory. Use this option only if the application saves its own screen information.
- **Reserved Shortcut Keys** saves any checked shortcut keys for use by the application, instead of carrying out Windows actions. As soon as you switch back to Windows, the keys once again work for Windows actions.

PIF Settings for 386 Enhanced Mode

For 386 enhanced mode, many of the options in PIF Editor are the same or nearly identical to those for standard mode. Another dialog box, the Advanced Options, contains additional items for specifying more information.

For options that are similar to those for standard mode:

- For video memory, you can differentiate Text (requiring 16K of memory), Low Graphics (equivalent to CGA resolution, requiring 32K of memory), and High Graphics (EGA or higher resolution, requiring 128K of memory). Choose High Graphics and check Retain Video Memory in the Advanced dialog box to reserve the most video memory for the application.
- For system memory, you can also specify expanded memory requirements.
- For reserved shortcut keys, you can reserve additional keys, and you can define a shortcut key for switching to the application from another window.
- The options for EMS, XMS, and video memory are in the basic Virtual Memory dialog box, rather than in the Advanced dialog box.

W

Figure 8.2

The PIF Editor
dialog box for
386 enhanced mode

To display this dialog,
in Program Manager click:

The additional items in the PIF Editor and Advanced Options dialog boxes for 386 enhanced mode are settings that control how the application uses system resources. For details about how these options relate to multitasking as timeslicing, see “How 386 Enhanced Mode Works with MS-DOS” in Chapter 7, “Setting Up Non-Windows Applications.”

- Display Usage options specify whether the application runs in full screen, and Execution options specify how the application shares resources. Checking Exclusive can give an application more memory and more processor time.
- Multitasking options in the Advanced Options dialog box specify timeslicing priorities for how much system time the application is given (similar to the Scheduling options for Windows in the 386 Enhanced dialog box in Control Panel). The Background Priority setting is ignored if Execution Background is not checked.

Check Detect Idle Time to give the application’s timeslices to other applications when this application is not processing information.

Do not check Detect Idle Time for communication applications that work as 3270 or 5251 emulators. Also, clear this option when troubleshooting for an application that runs slowly or doesn’t work properly.

Figure 8.3

Advanced Options dialog box for
PIF Editor in
386 enhanced mode

To display this dialog, click Advanced
in PIF Editor

- Memory Options control whether Windows swaps the application's use of conventional, EMS, or XMS memory to a swap file on the hard disk, and whether the application can be loaded into the HMA.

Locking any memory option improves performance for that application, but slows down the rest of your system and reduces memory available elsewhere.

- Display Options control video memory. Checking any Monitor Ports option will increase system overhead, but lets Windows monitor whether the application is using the same values as the video adapter for display. Set one of these options if the display isn't restored properly after switching from the application. The other two options, Emulate Text Mode and Retain Video Memory, can speed up the display (at the expense of available video memory).
- Allow Fast Paste lets Windows determine whether it can find the best method for pasting into the application.
- Allow Close When Active lets you quit Windows without having to close each application.

Important Checking Allow Close When Active can cause loss of data or file damage if Windows closes the application before the application closes its files. Do not check this option for databases and word processors, or for any application that does not use standard MS-DOS file handles.

Modifying the Default PIF

Setup always installs _DEFAULT.PIF in the WINDOWS directory to be used as the PIF for applications that do not have custom PIFs. You can use _DEFAULT.PIF as a starting point for creating a PIF for an application. By using _DEFAULT.PIF, you can begin with the common optimal settings for Windows, then experiment to refine the settings for running the application on your system.

To modify the _DEFAULT.PIF file:

1. Run PIF Editor by choosing its icon in the Main group of Program Manager, then open the _DEFAULT.PIF file.

2. Make the changes you need for your application. Your application manufacturer can give you recommendations concerning these changes.
3. Choose Save As from the File menu, and type a new name for the file in the Filename box.

Use the same filename that the application uses, but add a .PIF filename extension. For example, if the application filename is SPECIAL.EXE, use the filename SPECIAL.PIF for the PIF. Save the file in the WINDOWS directory.

Creating Multiple PIFs for a Single Application

You might want to create more than one PIF for a single application. For example, you might want to specify different startup directories for different spreadsheet projects. Or you might want to use expanded memory with a word processor in some cases, but not in others.

To be able to start an application in different configurations:

1. Create two PIFs for the different configuration options.
For example, specify a different directory in the Start-Up Directory box of PIF Editor for each PIF. Or specify different video memory and system memory options.
2. Give each PIF a distinguishing filename (for example, BUSINESS.PIF and PERSONAL.PIF).
3. Add both PIFs to Program Manager and give them each a distinguishing title (for example, WP-Business and WP-Personal).

Then you can start your application in either configuration by choosing the appropriate program-item icon.

Note

If you specify a different directory in the PIF for an application than is specified as the Working Directory for the program-item icon in Program Manager, the Program Manager setting overrides the Start-Up Directory setting in PIF Editor.
