









## Troubleshooting Multimedia

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## Troubleshooting Multimedia

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### System Problems

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### Control Panel Problems

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## System Problems

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System Problems



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## Multimedia Features Don't Work



There are several reasons why the multimedia capabilities of your PC might not be working:

- First check to make sure your computer already has already installed the multimedia extensions to Windows. You can quickly tell whether you have the standard Windows 3.0 or Windows 3.0 with multimedia extensions by starting Control Panel from the Main group of Program Manager. The multimedia extensions add the following icons: Display, Drivers, Joystick, MIDI Mapper, and Screen Saver. If these icons aren't there, you must install the multimedia extensions as described in the documentation provided.
- Your multimedia features only work when running Windows in Standard or 386 Enhanced mode. If you're running Windows in Real mode for some reason, animations, audio, and MIDI won't work.








## Your Computer (or Windows) Fails to Start

If your computer doesn't start up when you turn it on, check for the following conditions:

- First make sure all cables are plugged in correctly, and the PC and its associated monitor are turned on.
-  If you have upgraded your PC with an MPC upgrade kit, make sure the upgrade hardware is installed correctly.
-  Some CD-ROM drives require that a disc be in the drive. Otherwise, the PC fails to start up correctly. Read the documentation associated with your CD-ROM drive to find out whether this is necessary and if so, which disc to insert.

## Your Application Won't Play Audio

If you find that when running a multimedia application you can't hear any audio, run through the following checklist:



-  Make sure you have your speakers plugged into the right port. With some configurations, it's easy to confuse the microphone port with the speakers' port.
-  Verify that speakers are getting the power they need to operate. Some speakers require an external power source or batteries.
-  Check the volume setting for your PC's audio hardware. You might have it turned all the way down.
-  Use the Drivers setting in the Control Panel to make sure you have the right audio driver installed and the settings are configured correctly. Your hardware manufacturer's documentation should provide this information.
-  Related Command

## Audio Is Too Loud or Too Soft

If you can hear audio, but it's too loud or too soft, check the volume control on your PC's hardware and make any necessary adjustments. You might also check the batteries in your speakers to see if they need to be replaced.




## You Can't Hear Audio When Running an MS-DOS Application That Supports Audio

Several MS-DOS applications exist that support audio. If you try to run one of these applications in 386 enhanced mode, the following message might appear: "This application will not be able to use audio." This is because Windows running in 386 enhanced mode takes over the audio hardware and won't relinquish control to an MS-DOS application. You can run the application with audio in two ways:

-  Exit Windows and run the application from MS-DOS.
-  Exit Windows, and restart Windows in standard mode by typing `win /s` on the MS-DOS command line. This will let you run the MS-DOS application from Windows with audio intact.







## You're Not Getting 256 Colors in Your Display

There are several reasons why your display might not display 256 colors:

-  Your VGA card only supports 16 colors. This is a standard configuration; the MPC specification supports both 16-color and 256-color displays. Check your hardware documentation to determine the capabilities of your system.
-  You're running a different VGA display driver instead of the 256-color VGA display driver. Use the Display setting in the Control Panel to change your display driver.
-  Related Command

## You Can't Test Sounds with the Control Panel's Sound Setting

When using the Sound setting from the Control Panel, if you find that you can't play test sounds, you should make the following checks:

-  Make sure you have your speakers plugged into the right port. With some configurations, it's easy to confuse the microphone port with the speakers' port.
-  Verify that speakers are getting the power they need to operate. Some speakers require an external power source or batteries.
-  Check the volume setting for your PC's audio hardware. You might have it turned all the way down.
-  Use the Drivers setting in the Control Panel to make sure you have the right audio driver installed and the settings are configured correctly. Your hardware manufacturer's documentation should provide this information.
-  If the Test button is greyed, then the audio driver isn't correctly installed. Use the Drivers setting in the Control Panel to correctly configure your system's audio driver.
-  Related Commands




## Commands

[Drivers Command](#)

[Sound Command](#)

## Your Joystick Doesn't Work Correctly

If you have troubles making your joystick respond correctly, try the following:

-  Check to make sure the joystick is properly connected to your PC.
-  Start Control Panel from the Main group of Program Manager. Then use the Joystick setting to calibrate your joystick to make it work properly.
-  Related Command



## Windows Entertainment Pack Screen Savers Don't Work





Control Panel includes a Screen Savers setting. If you have the Windows Entertainment Pack, you can run the Idlewild screen savers through Control Panel. If you don't see the Idlewild screen savers listed in the Screen Saver's setting, check the PATH in your AUTOEXEC.BAT file. The directory in which you've placed the Idlewild screen savers (typically WEP) must be in your PATH for Control Panel to find them.



Related Command






## Your PC Doesn't Recognize the CD-ROM Drive

If your system doesn't recognize that a CD-ROM drive exists, you should check the following possibilities:

-  If you have an external drive, make sure the cable is securely attached and connected to the right port.
-  Some drives require an external terminator. Check to make sure this is installed if needed. See your CD-ROM drive documentation for details.
-  Make sure that you've installed the MSCDEX CD-ROM driver. You should have installed this at the same time as you set up your CD-ROM drive. The CD-ROM drive manufacturer is responsible for providing this software.
-  If you have installed MSCDEX correctly, check the PATH statement in your AUTOEXEC.BAT file to make sure the directory that holds the MSCDEX software is in the PATH. If it isn't, add it to the PATH line in your AUTOEXEC.BAT file.






## Your CD Drive Can't Read the CD Disc Correctly

There are several reasons why a CD-ROM disc might not work correctly:

-  Make sure you place the disc in its drive caddy before inserting it into the drive.
-  Make sure you insert the disc with its label side up.
-  If you upgraded your PC with an MPC upgrade kit, make sure you've installed and configured the hardware correctly according to the manufacturer's documentation.
-  Make sure you're using the right kind of disc. CD-ROM discs contain information and multimedia applications. CD audio discs contain music; you can't use File Manager or any other MS-DOS/Windows file-oriented commands on an audio disc.
-  Even though discs are quite durable, they are plastic and can become damaged. Excessive heat can warp or even melt a disc. Scratches on the surface can cause problems, as can fingerprints. You should clean a disc by wiping with a soft cloth from the center of the disc outward in a straight line--do not use alcohol-based cleaning solutions.

## Music Box Doesn't Play Correctly

If you discover that Music Box won't play a disc or plays very slowly, check the following:

-  Make sure you have a disc in the drive before starting Music Box.
-  Make sure you place the disc in its drive caddy before inserting it into the drive.
-  Make sure you're using the right kind of disc. Music Box can't play a disc that doesn't have audio.
-  Make sure you're using the most current version of the CD-ROM driver software (MSCDEX). If you're using an older version, this can cause Music Box to play too slowly. Your CD-ROM drive manufacturer is responsible for providing the latest version of MSCDEX.
-  [Related Topics](#)

## **Topics**

[Audio Is Too Loud or Too Soft](#)

[Multimedia Features Don't Work](#)






[Your Application Won't Play Audio](#)

[Your CD Drive Can't Read the CD Disc Correctly](#)

[Your PC Doesn't Recognize the CD-ROM Drive](#)





## Sound Recorder Doesn't Record

Sound Recorder lets you play and record short audio files. If you find that you can't record a file with Sound Recorder, check the following:

-  Make sure you have the microphone turned on.
-  Make sure you speak clearly and distinctly into the microphone. Sound Recorder can't record what it can't detect.
-  Make sure you have the microphone plugged into the correct port. Some audio cards place the microphone port and speaker's port close together, and it's easy to plug the microphone into wrong spot.
-  Make sure you've correctly set the output volume level of your audio hardware. If you have it set too low, you'll be able to see the audio recording, but you won't be able to hear it when you play it back.
-  Make sure you have disk space available on your PC to hold the recorded file.

## Media Player Won't Play MIDI Files

If Media Player won't play MIDI files, check the following:

-  Make sure you've set Media Player to play MIDI files through the Device menu.
-  Make sure that you've got the right MIDI driver installed. Use the Drivers setting in the Control Panel to see whether you have a MIDI driver set up and ready for use.
-  Make sure you're using the right MIDI mapping setup. If you've added MIDI hardware, you might have to reconfigure your MIDI mapping with the MIDI Mapper setting in Control Panel.
-  Related Topics

## **Commands**

[Drivers Command](#)

[MIDI Mapper Command](#)




## **Procedure**

[Opening a Media Device](#)



## Media Player Won't Play Animations

If Media Player won't play animation files, check the following:

-  Make sure you've set Media Player to play animation files through the Device menu.
-  Make sure that you've got the animation driver installed. Start up the Drivers setting in Control Panel and see whether you have the Microsoft MCI Driver for MMP set up and ready for use.
-  Related Topics

**Command**





[Drivers Command](#)

**Procedure**

[Opening a Media Device](#)

## Media Player Won't Play Audio Files

If Media Player won't play audio files, check the following:

-  Make sure that you've got the right audio driver installed. Use the Drivers setting in Control Panel to see whether you have the right audio driver set up and ready for use.
-  Make sure you've set Media Player to play audio files through the Device menu.
-  Make sure the file you want to play is a .WAV file.
-  Related Topics



## Troubleshooting Networks

Click a folder or topic title.



 What To Do If...

## Troubleshooting Networks

Click a folder or topic title.



### What To Do If...

[Your System Fails When You Start Windows in Standard Mode](#)

[Your System Fails When You Start Windows in 386 Enhanced Mode](#)

[Your System Fails When You Run an Application Accessing the Network](#)

[An Application Does Not Run Correctly in Standard Mode](#)

[An Application Does Not Run Correctly in 386 Enhanced Mode](#)

[Non-Windows Applications Will Not Run](#)


[You Cannot Connect to Network Drives or Printers](#)

## Your System Fails When You Start Windows in Standard Mode


If your system fails when you start Windows in standard mode, it is possible that your network does not support Windows in this mode. Try starting Windows in real mode by typing `win /r` at the MS-DOS prompt.

## Your System Fails When You Start Windows in 386 Enhanced Mode

Depending on which unsupported network you are using, your system might fail when you start Windows in 386 enhanced mode for one of two possible reasons:

 Most likely, your network does not support Windows in this mode.

Try starting Windows in standard mode by typing win /s at the MS-DOS prompt.

 Windows might not run in 386 enhanced mode if the network is not set up to handle the way your network card uses memory.

This problem can take two forms:

First, the network may require a larger buffer for direct memory access (DMA) data transfers than Windows normally provides. Second, your network may not be able to run unless Windows is prevented from using a portion of memory between 640K and 1 megabyte to map unused address space.


You can make Windows running in 386 enhanced mode compatible with your network card by changing the NetDMASize or EMMExclude setting in the [386enh] section of your SYSTEM.INI file. Whether you will need to change these settings depends on your network hardware. See the procedure that follows.


**CAUTION:** If you change the contents of your SYSTEM.INI file incorrectly, your system may not function properly. See your network administrator before changing these settings.

### To change the size of the direct memory access (DMA) buffer:

1 Open your SYSTEM.INI file using a text editor such as Notepad.

Your SYSTEM.INI file is located in the directory with Windows.

2 Find the [386enh] section of the file. 

3 Add the NetDMASize setting if you need to tell Windows how much memory (in kilobytes) to reserve for direct memory access. The default value is 32 on Micro Channel machines (such as the IBM PS/2) or 0 on other machines. 


4 Save your SYSTEM.INI file.


5 Exit and restart Windows in 386 enhanced mode.

### To prevent Windows from scanning or using a part of conventional memory:

1 Open your SYSTEM.INI file using a text editor such as Notepad.


Your SYSTEM.INI file is located in the directory with Windows.

2 Find the [386enh] section of the file. 

3 Add the EMMExclude setting to specify a range of memory addresses. 

Windows will be prevented from scanning these addresses when running in 386 enhanced mode.

4 Save your SYSTEM.INI file as text only.

5 Exit and restart Windows in 386 enhanced mode. 



**hint**

If you are using Notepad, you can do this by choosing Find from the Search menu, typing [386enh], and choosing OK.

**example**

To tell Windows to provide a 32K buffer for direct memory access, you would type the following:

```
NetDMASize= 32
```

**example**

To tell Windows not to scan the addresses between C800:0000 and D000:0000, you would type the following:


```
EMMExclude = C800-CFFF
```

**hint**

If, after trying the preceding methods, you still cannot run Windows on the network, perhaps you can run Windows without the network loaded. Ask your system administrator for assistance.


## Your System Fails When You Run an Application Accessing the Network

Your system might run Windows, but fail when you run an application that is directly accessing the network. There are two reasons why this might happen:

 The network-specific application might not run if you are running Windows in standard mode or 386 enhanced mode.

If this is the case, try running Windows in real mode by typing win /r at the MS-DOS prompt.

You might also be able to solve this problem by obtaining a special Windows library for your network from your network vendor.

 Windows might fail when you are running the application and then switch to or from a non-Windows application.

If this happens, avoid switching to another application.

If you are running the non-Windows application with Windows in real or standard mode, you can prevent switching from it by selecting the Prevent Program Switch option in the application's PIF.


With 386 enhanced mode, you might also need to prevent the invisible switching that Windows does to run applications in the background.


If the network-specific application is a Windows application, make sure that any non-Windows applications you are running at the same time do not run in the background.

If the network-specific application is a non-Windows application, try running it in exclusive mode.

If the application creates or deletes files, it might not be running exclusively even if it has been set to run in exclusive mode. This is because Windows is alerted anytime a file is manipulated. You can prevent this alert by changing the FileSysChange setting in the [386enh] section of your SYSTEM.INI file.

### **To prevent Windows from getting file manipulation messages:**

- 1 Open your SYSTEM.INI file using a text editor such as Notepad.  
Your SYSTEM.INI file is located in the directory with Windows.
- 2 Find the [386enh] section of the file. 
- 3 Type the line FileSysChange=no in the section.
- 4 Save your SYSTEM.INI file as text only.
- 5 Exit and restart Windows in 386 enhanced mode.

 Related Options

## Options

[Execution Background](#)

[Execution Exclusive](#)


[Prevent Program Switch](#)

## An Application Doesn't Run Correctly in Standard Mode

If you are running Windows in standard mode, a Windows application might not run correctly if it requires a larger buffer for transferring data over the network than Windows normally provides.

You can increase the buffer size by changing the NetHeapSize setting in the [standard] section of your SYSTEM.INI file.

### **To increase the size of the data transfer buffer:**

- 1 Open your SYSTEM.INI file using a text editor such as Notepad.  
Your SYSTEM.INI file is located in the directory with Windows.
- 2 Find the [standard] section of the file.  
If you are using Notepad, you can do this by choosing Find from the Search menu, typing [standard], and choosing OK.
- 3 Add the NetHeapSize setting to tell Windows the maximum buffer size (in kilobytes) required for data transfers. The default value is 8. 
- 4 Save your SYSTEM.INI file as text only.
- 5 Exit and restart Windows in standard mode.

**example**

To make the buffer size 16K, you would type the following:

```
NetHeapSize = 16
```




## An Application Doesn't Run Correctly in 386 Enhanced Mode

If you are running Windows in 386 enhanced mode, a Windows application might not run correctly if it requires a larger buffer for transferring data over the network than Windows normally provides.


You can increase the buffer size by changing the NetHeapSize setting in the [386enh] section of your SYSTEM.INI file.

### **To increase the size of the data transfer buffer:**


- 1 Open your SYSTEM.INI file using a text editor such as Notepad.  
Your SYSTEM.INI file is located in the directory with Windows.
- 2 Find the [386enh] section of the file.  
If you are using Notepad, you can do this by choosing Find in the Search menu, typing [386enh], and choosing OK.
- 3 Add the NetHeapSize setting to tell Windows the maximum buffer size (in kilobytes) required for data transfers. The default value is 12. All values are rounded up to the nearest 4K. 
- 4 Save your SYSTEM.INI file as text only.
- 5 Exit and restart Windows in 386 enhanced mode.


## Non-Windows Applications Will not Run

If you are not able to run any non-Windows applications while you are connected to the network, try the following:

 Run in a lower Windows mode.

If you are running Windows in 386 enhanced mode, try running Windows in standard mode by typing win /s at the MS-DOS prompt. If non-Windows applications do not run with Windows in standard mode, try running Windows in real mode by typing win /r.

 Avoid switching to or from any non-Windows applications.

 If you are running Windows in 386 enhanced mode, you can try running non-Windows applications in exclusive mode.

 Related Option

## You Cannot Connect to Network Drives or Printers

If you are running Windows, but cannot connect to network disk drives or printers, try connecting to them before starting Windows.





What To Do If...



## What To Do If...

[Your Printer Does Not Print at All](#)

[Paper Advances but the Printer Does Not Print](#)

[Printed Page Is Formatted Incorrectly](#)

[Printer Output Is Garbled](#)

[Printer Output from Two Files Gets Mixed](#)

[Laser Printer Does Not Print Cartridge of Soft Fonts](#)

[Your Printer Loses Text](#)











[Only Part of a Page Prints](#)

[Lines Are Missing from a Paintbrush Drawing](#)

[Your Printer Is Not in the Printers Dialog Box](#)

## Your Printer Does Not Print at All

When a printer won't print, the cause is often a simple mechanical problem, such as the printer being offline, turned off, or disconnected. Use the following checklist to see if you can find the problem:

-  You have the correct cable for your printer and is it properly connected.
-  The printer is plugged in and turned on.
-  The printer is properly installed.
-  The correct printer is selected as the default printer.
-  The settings for print option are correct.
-  You chose the correct port for the selected printer.
-  If you have a serial printer, the settings in the Ports-Settings dialog box are correct.
-  The [SET TEMP command is set properly](#).
-  Your computer has the [correct version MS-DOS](#).
-  You need to change the ribbon, mount a print wheel or cartridge, or add paper.

If you complete the checklist and still can't print, you should quit the application you are working with and try to print a text file from the Windows File Manager.

If you still can't print, you have a problem with the printer or a problem with the cable. Try connecting the printer again. If this doesn't help, contact your printer manufacturer or dealer.

-  [Related Procedures](#)

## **Procedures**

[Choosing the Default Printer](#)

[Configuring Communications Ports](#)

[Installing New Printers](#)

[Printing Files](#)

[Selecting a Printer Port](#)

[Selecting Printer Settings](#)



## Making Sure that the SET TEMP Command Is Set Properly

In order to print from Windows, your AUTOEXEC.BAT file should contain a SET TEMP command that specifies a drive with at least 1 megabyte of free disk space.

### **To make sure the SET TEMP command is set properly:**

- 1 Use a text editor (such as Notepad) to open your AUTOEXEC.BAT file.
- 2 See if the file contains a SET TEMP command.
- 3 If the file does not already contain a SET TEMP command, add one that specifies a drive with 1 megabyte of free disk space.





For example, if drive D has more than 1 megabyte of free disk space, the SET TEMP command might look like the following:

```
set temp = d:\
```

- 4 Save your AUTOEXEC.BAT file as text only.
- 5 Restart your system by pressing CTRL+ALT+DELETE, restart Windows, and try printing again.

## Paper Advances but Printer Doesn't Print

When your printer advances the paper but doesn't print, you might have missed one of the following requirements:

-  Select the correct paper source when you set up print options.
-  Select the correct printer name when you set up print options.
-  Configure the correct printer-driver file for your printer.
-  Related Procedures

## **Procedures**








[Adding Printer Drivers](#)

[Selecting Printer Settings](#)

[Selecting Printers to Use with Printer Drivers](#)

## Printed Page Is Formatted Incorrectly

If the pages of a document are formatted incorrectly, the margins are incorrect, the document contains extra lines, or the document is paginated incorrectly, use this checklist:

-  The formats you chose in your application are accurate, especially font and font size selections.
  -  The correct printer is selected as the default printer.
  -  When you installed your printer, you selected the correct printer name when you set up printer options.
  -  When you set up your printer, you selected the correct paper source.
  -  Your printer has hardware switches that set page length or line length.
- Check your printer manual.
-  Your printer has a hardware switch that does an automatic linefeed at each carriage return.
- Check your printer manual. The switch that controls the automatic linefeed at a carriage return should be set to do carriage returns only.
-  Related Procedures

## **Procedures**


[Choosing the Default Printer](#)


[Selecting Printer Settings](#)

[Selecting Printers to Use with Printer Drivers](#)


## Printer Output Is Garbled

If you can print your document, but it is garbled, unreadable, or contains extra characters in front of the text, use this checklist:


 The correct printer is selected as the default printer.


 When you installed your printer, you selected the correct printer name when you set up printer options.


If the wrong printer or the wrong font cartridge is selected, the printer might insert stray characters at the beginning of lines or behave in other unpredictable ways.

 If you have a serial printer, the settings are correct in the Ports-Settings dialog box.

Lowering the baud rate might cause the printer to print correctly.

 Windows has another printer-driver file that might be compatible with your printer, and you tried using it.

 Your printer's buffer retained garbled information, and you tried turning the printer off and back on again.

 Your printer cable works properly. Verify that you have the correct cable and that it is functioning.

As a last resort, you might try installing the Windows Generic/Text Only printer-driver file to see how it works with your printer.

You might also want to contact your dealer or printer manufacturer to determine if your printer is the problem.

 Related Procedures

## **Procedures**

[Choosing the Default Printer](#)

[Configuring Communications Ports](#)

[Selecting Printers to Use with Printer Drivers](#)

**example**

If your printer is an Epson or IBM-compatible printer, one of the printer-driver files for another Epson or IBM printer might work with your printer.



## Printer Output from Two Files Gets Mixed







If the printer output from two files comes out mixed together, use this checklist:

- You have a Windows application and a non-Windows application assigned to the same port, switched between them, and then tried to print from both of them at the same time.
- You have two non-Windows applications assigned to the same port, switched between them, and then tried to print from both of them at the same time.

Print Manager cannot help you in either of these two cases. When running Windows in real or standard mode, the system cannot warn you about device-contention problems. When running Windows in 386 enhanced mode, you would see a message advising you to resolve this device-contention situation before the printer would print.

## Laser Printer Doesn't Print Cartridge or Soft Fonts

If you install a font cartridge or soft fonts for your laser printer, but the printer doesn't use the fonts, use this checklist:

-  The print options settings for your printer are correct.
-  If you are using a font cartridge, it is all the way in the slot.  
Turn off the printer before checking this.  
You might need to press firmly on the cartridge until it pops into the slot.
-  If you are using any soft fonts, they are properly installed.  
Refer to the installation kit provided with your soft fonts.
-  If your soft fonts are installed as permanent, perhaps the printer was turned off or reset. You tried downloading the soft fonts to the printer again.
-  If you are using too many soft fonts, your printer might have run out of memory. You tried installing fewer fonts or installing them as temporary fonts, if appropriate.
-  Related Procedure


## Your Printer Loses Text


If you have a serial printer and it prints the document but loses blocks of text, you might have a handshake or flow control problem with your communications port.

To check for a handshake or flow control problem, use this checklist:

 The settings in the Ports-Settings dialog box are correct.


Lowering the baud rate might cause the printer to print correctly.

 If you are still losing text, you changed to a lower baud rate than the one you were using now.


 If you have a parallel interface, you tried using a new cable of the same type.

To check for other problems, use this checklist:

 All the manual switches on your printer were set as described in the printer's documentation.



 You are using the correct printer-driver file.

If these suggestions don't work, try printing with the Generic/Text Only printer driver.

 Related Procedure

## Only Part of a Page Prints

If your printer prints only part of your document, use the following checklist:

-  The paper size you chose when setting up the printer matches the paper loaded in the printer.
-  You are printing with a PCL/HP LaserJet printer.

If so, your printer might not be able to print every available graphics resolution as a full page. There might be too much information on a page for your printer's memory to handle.

When this happens, you might get a message on your printer indicating the problem. Try printing at a lower graphics resolution.

(For more information, see the related procedure. For more information on printing graphics with a PCL printer, see your printing manual.)

-  [Related Procedure](#)

## Lines Are Missing from a Paintbrush Drawing

If lines seem to be missing from the printed copy of a Paintbrush drawing, you have probably set a width and/or height in Paintbrush's Page Setup dialog box that is too small for the width and/or height setting in the Image Attributes dialog box. When this happens, line information for the drawing can be lost when Paintbrush shrinks the picture for printing.

You can usually solve this problem by proportionally increasing the dimensions of the printed drawing in the Page Setup dialog box. The best way to avoid the problem is to print using the standard margin settings in the Page Setup dialog box or use the Shrink + Grow command on the Paintbrush Pick menu to shrink the drawing to a smaller size before printing.



Related Procedures

## **Procedures**

[Changing Default Settings for New Drawings](#)

[Setting Margins](#)

[Shrinking and Enlarging Cutouts](#)



## Your Printer Is Not in the Printers Dialog Box

If your printer does not appear in the Printers dialog box, you can still make your printer work with Windows.

Check the printer manual that came with your machine to see if your printer is 100 percent compatible or has an emulation mode that is compatible with one of the printers in the List of Printers box. Look for a section on dip switch settings or modes in the index of the manual.

For example, many dot-matrix printers can be made compatible with an Epson printer by changing dip switch settings on the back of the printer. Also, many laser printers can be made compatible with an HP LaserJet by changing dip switch settings or by selecting the proper choice from a menu panel on the printer. When you use your printer in emulation mode, however, be aware that you might not be able to use all the features unique to the printer.

If your printer is not 100 percent compatible and does not have an emulation mode that is compatible with one of the printers in the List of Printers box, you have two options:

-  Contact your printer manufacturer for a new printer driver that works with Windows.
-  Request the Supplemental Driver Library (SDL) from Microsoft. Microsoft adds drivers as they become available. The SDL is also available on bulletin boards.

Refer to the Control Panel instructions about installing printer-driver files.

If none of these suggestions works for you, choose Generic/Text Only from the List of Printers box. The Generic/Text Only printer driver works with most printers and should be chosen for daisy-wheel printers. It prints text, but not graphics.

-  Related Procedure





## Troubleshooting Terminal

Click a folder or topic title.



 What To Do If...

## Troubleshooting Terminal

Click a folder or topic title.



### What To Do If...

[Your Modem Does Not Dial the Number](#)

[The Operator Interrupts Your Call](#)

[Your Modem Dials but Doesn't Connect](#)




[You Cannot Send or Receive a Text File](#)

[Binary Send or Receive Doesn't Work](#)

[Incoming Files or Keystrokes Don't Print](#)


## Your Modem Does Not Dial the Number

You might have a hardware connection problem or the baud rate set improperly. Use this checklist to see if you can find the problem:


-  Are the correct cables attached to the modem and phone jack, or between the two computers?
-  Was the proper COM port specified in the Connector option when you chose the Communications command from the Settings menu?
-  Related Procedure

## The Operator Interrupts Your Call

If the modem dials the number but you get a message from the operator, your modem might be misdialing. Use this checklist:


 Is the number correctly entered in the Phone Number option?

Choose Phone Number from the Settings menu to check.

 Does your modem run at a slower baud rate?

You might have to reduce the baud rate so that your modem can interact with the communications port.

If these steps do not work, you might need to have your modem serviced.

 Related Procedures





## **Procedures**

[Specifying Communications Parameters](#)

[Specifying the Phone Number](#)

## Your Modem Dials but Doesn't Connect

You might not have the correct settings for the remote computer. Communicating systems must use the same baud rate, although some modems can automatically drop back to the rate of the remote modem and signal Terminal of the change. (Check your hardware manual for this feature.) If you want to transfer data, both systems must also use the same settings for the following options:

-  Data bits
-  Parity type (none, odd, even, mark, and space)
-  Stop bits
-  Flow control

If you do not know what settings the remote system is using, refer to its documentation on calling the remote system's information number (not the data transmission number). Request the information and then set Terminal accordingly by using the Communications command on the Settings menu.


-  Related Procedure

## You Cannot Send or Receive a Text File

Communicating systems must use the same handshaking, or flow control, method.

 What software handshaking method, if any, does the remote system use?

The standard method is Xon/Xoff. However, you can use another method by changing communications settings. (See the related procedure).

 Does the remote system use hardware handshaking?

If so, you must select Hardware from the dialog box that appears when you choose the Communications command from the Settings menu.

 Related Procedure

## Binary Send or Receive Doesn't Work

Communicating systems must use the same transfer protocol. You might have specified a protocol that the remote system does not use.




To change the protocol, choose the Binary Transfers command from the Settings menu.

 [Related Procedure](#)



## Incoming Files or Keystrokes Don't Print

Make sure the printer is properly connected and turned on and that the printer has paper. If the printer is ready, use this checklist:

-  You indicated the correct settings using the Printer Setup command on the File menu.
-  You chose Printer Echo before receiving the file.
-  The Local Echo option in the Terminal Preferences dialog box is selected.

Local Echo allows your keyboard entries to print.

**NOTE:** You can find other topics about solving printer problems by choosing the Printing category from the Troubleshooting Contents screen.

-  [Related Procedures](#)

## **Procedures**

[Changing Printers and Printer Options](#)

[Printing Incoming Text](#)









[Specifying Terminal Modes](#)



## Troubleshooting Windows

Click a folder or topic title.



-  [Application Problems](#)
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-  [Setup Problems](#)
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# Troubleshooting Windows

Click a folder or topic title.



## + Application Problems

[You Cannot Switch from a Non-Windows Application](#)

[An Application Is Abnormally Slow](#)

[Application Window Stays When You Close It](#)

[You Cannot Quit an Application](#)

[You Receive a "No Association" Error Message](#)

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## + Clipboard Problems

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# Troubleshooting Windows

Click a folder or topic title.



+ Application Problems

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## Troubleshooting Windows

Click a folder or topic title.



+ Application Problems

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+ Communication Problems

[You Are Having Communications Problems with Windows](#)

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Application Problems



Clipboard Problems



Communication Problems



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Memory Problems



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Setup Problems



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Mouse Problems

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Application Problems



Clipboard Problems



Communication Problems



Display Problems



Memory Problems



Mouse Problems

[A Logitech Mouse Isn't Working Properly](#)

[The Mouse Doesn't Work with a Non-Windows Application](#)



Setup Problems



System Problems



Application Problems



Clipboard Problems



Communication Problems



Display Problems



Memory Problems



Mouse Problems











Setup Problems

[Your System Hangs When You Run Setup](#)

[Setup Didn't Find Some Non-Windows Applications](#)



System Problems

-  Application Problems
-  Clipboard Problems
-  Communication Problems
-  Display Problems
-  Memory Problems
-  Mouse Problems
-  Setup Problems
-  System Problems

[You Can't Start Windows](#)


[Windows Starts in Real Mode When You Type \*\*win\*\*](#)

[A Key or Key Combination Gives Unexpected Results](#)


[Your System Stops Responding or Exits Unexpectedly](#)

## You Cannot Switch from a Non-Windows Application

If you can't switch away from a non-Windows application, the reason might be:


 The application's PIF might reserve one or more Windows shortcut keys for the application.

Quit the application and edit its PIF. Clear the Reserve Shortcut Keys check boxes for ALT+TAB, ALT+ESC, and CTRL+ESC.

 The application might be using a video mode that Windows doesn't support. Therefore, Windows cannot save and restore the application's display.

Quit the application and edit its PIF. Try selecting a higher video mode.


If you are running Windows in real mode or standard mode and you can't switch away from the application, the reason might be:

 The Prevent Program Switch check box might be selected in the application's PIF.


Quit the application and edit its PIF. Clear the Prevent Program Switch check box in the PIF.

 The wrong video mode might be selected in the application's PIF.

Quit the application and edit its PIF. Try selecting a higher video mode.

 One or more Directly Modifies options might be set in the application's PIF.

Quit the application and edit its PIF. Try clearing one or more Directly Modifies check boxes.

 The application might be intercepting all keyboard input. Some applications intercept keyboard input before Windows can receive and process your keystrokes.

You cannot switch away from such an application. You must quit the application to return to Windows or switch to other applications.

**CAUTION:** Sometimes an application's PIF contains settings that purposely prevent you from switching from that application because doing so might result in a lost display or lost data. Use caution when changing these settings.

 Related Topics

## **Options**

[Directly Modifies \(Communications Ports\)](#)

[Directly Modifies \(Keyboard\)](#)


[Prevent Program Switch](#)

[Video Mode](#)


## **Procedure**

[Editing PIFs](#)

## An Application Is Abnormally Slow


If a Windows application is running very slowly, your system is probably low on memory or other applications are taking up some processor time. 


If a non-Windows application is running very slowly, these are possible causes:

 The application was not given enough memory when it was started. Although it can run with that amount of memory, it runs more slowly.

Free up some memory before running Windows. Windows cannot give a non-Windows application any more conventional memory than was available when you started Windows. Therefore, freeing up memory before starting Windows can make more memory available to each non-Windows application.

If you are running Windows in 386 enhanced mode, try increasing the KB Required and KB Desired settings in the application's PIF.

 Windows is not giving the application enough of the computer's processor time (386 enhanced mode only).


 The application might not be getting enough processor time, or other running applications are getting too much processor time.

To reallocate processor time, choose the Settings command in the application's Control menu and change the Background or Foreground option while the application is running. Or change the Foreground Priority and Background Priority options in the application's PIF. (You might also want to change the Priority options for other applications that you plan to run at the same time as this application.)


 Sometimes Windows applications might use more processor time than you want.

To make more time available to a non-Windows application, give it exclusive status. To do so, select the Exclusive option in the application's PIF, or choose the Settings command in the application's Control menu and select Exclusive.

Keep in mind that this option gives the application 100% of the processor time, and no other applications can share processor time while the application is active.

 Windows is incorrectly treating that application as idle (386 enhanced mode only).

Occasionally, Windows interprets a non-Windows application's pauses for maintenance activity as idle time. When Windows thinks an application is idle, it gives more processing time to other applications; this slows down an active application. To prevent Windows from trying to detect when an application is idle, clear the Detect Idle Time option in the application's PIF.

 Related Topics

## **Options**

[Background and Foreground Priority](#)

[Detect Idle Time](#)

[Execution Exclusive](#)

[Memory Requirements](#)

## **Procedures**

[Conserving Memory When Starting Memory-Resident Utilities](#)

[Streamlining Your CONFIG.SYS and AUTOEXEC.BAT Files](#)



**hint**

You can tell that there's not enough memory when your system's disk light is frequently lit. This indicates that Windows is frequently swapping information to disk to make room in memory for other information, or that Windows is re-reading information from the disk into memory.

## Application Window Stays When You Close It

Normally, when you quit a non-Windows application, Windows clears the application's display automatically. However, if the Close Window on Exit option is not selected in the application's PIF, the application's window will remain on the screen even though the application is no longer running.

If you are running Windows in real mode or standard mode, you can clear the screen and return to Windows by pressing any key or clicking a mouse button.

If you are running Windows in 386 enhanced mode, you can remove the inactive application window by double-clicking the window's Control menu box.

To allow Windows to remove the application's window automatically, edit the application's PIF and select the Close Window on Exit option.



Related Procedure

## You Cannot Quit an Application

Occasionally, a non-Windows application might encounter an error that prevents you from exiting the application normally. In that case, first try pressing CTRL+C or CTRL+BREAK.

If pressing CTRL+C or CTRL+BREAK does not work, try terminating the application using the End Task command in Task List.

If you are running Windows in 386 enhanced mode, you can also terminate the application by choosing the Settings command from the Control menu and then choosing Terminate.

**CAUTION:** Use the End Task and Terminate options only as a last resort. Terminating an application can result in lost data.



Related Procedure

## You Receive a "No Association" Error Message

If you receive the error message "No association exists for this file" when you try to run a non-Windows application with a PIF, you might have installed Windows 3.0 over an earlier version of Windows, and Setup might have incorrectly modified the WIN.INI file.

### To correct your WIN.INI file:

- 1 Open the WIN.INI file with a text editor.  
WIN.INI is located in the directory with Windows.
- 2 Locate the line that reads **Programs=com exe bat**.
- 3 Modify this line to include the extension **PIF**.  
The line should now read: **Programs=com exe bat pif**
- 4 Save WIN.INI as a text-only file.
- 5 Exit and restart Windows.  
You should now be able to run your non-Windows applications successfully from their PIF files.

## Wrong Application Starts When You Double-click an Icon in Program Manager

When adding applications, Setup displays the application's pathname in the lower-left corner of the dialog box. However, more than one application can have the same name. Also, since Setup identifies each application by its executable name, it might display the wrong name sometimes. (For example, WordPerfect and MultiMate both use the name WP.EXE.) If you did not check the pathname of an application when you added the application with Setup, the program item icon in Program Manager might have been assigned the wrong command line.

### **To modify the command line of a program item icon:**

- 1 Select the program item icon in Program Manager.
- 2 Choose Properties from the File menu.
- 3 Type the correct pathname in the Command Line text box.
- 4 Click OK.

## You Receive the "Unrecoverable Application Error" Message

This error occurs only when Windows is running in standard mode or 386 enhanced mode. It indicates that a Windows application has caused a protection violation (that is, an application has used an area of memory to which it does not have access, potentially corrupting other code in that area of memory).

If you receive this message, you should immediately close all applications, exit Windows, and restart your system. Don't continue using Windows without restarting your system. When this error occurs, it means that memory might have been corrupted. Until you restart your system, other applications, or Windows itself, might behave erratically or terminate unexpectedly.

**NOTE:** After one application causes this error, other applications might subsequently display the same error, even though they are not actually the cause of the problem.

### **To prevent an unrecoverable application error from recurring:**

- 1 Make sure the application was designed for Windows 3.0.

Many unrecoverable application errors are caused by running a Windows application that was designed for older versions of Windows.

If the error occurred when you were running an application designed for Windows 3.0, continue with Step 2.

- 2 Run Setup again to ensure that Windows is set up properly.

If the error recurs, continue with Step 3.

- 3 [Simplify your AUTOEXEC.BAT and CONFIG.SYS files.](#)

Simplifying these files can eliminate memory-resident software that is incompatible with Windows.

If the error recurs, proceed with Step 4.

- 4 [Make sure you are running the correct version of MS-DOS.](#)


## Making Sure You Are Running the Correct Version of MS-DOS

Each computer manufacturer's version of MS-DOS, such as MS-DOS for COMPAQ or PC-DOS for IBM systems, should be used only on corresponding systems. For example, MS-DOS for COMPAQ should be used only on COMPAQ systems, PC-DOS for IBM systems should be used only on IBM systems, and so on. You should use the version of MS-DOS that came with your computer.


To find out what version of MS-DOS you are using, type **ver** at the MS-DOS prompt. If you need to install a different version of MS-DOS, do so according to the manufacturer's instructions. After installing a different version of MS-DOS, restart your system by pressing CTRL+ALT+DELETE, and restart Windows.

## Can't Copy Entire Screen onto the Clipboard


If you are having trouble moving or copying information onto the Clipboard, one of these problems might be the cause:

 If you are running Windows in real mode or standard mode, the No Screen Exchange option might be selected in the application's PIF. This option prevents you from copying information onto the Clipboard using PRINT SCREEN or ALT+PRINT SCREEN. This option might have been set to give the application enough memory to run.


Try clearing this check box, starting the application, and copying the information again.

 The PRINT SCREEN or ALT+PRINT SCREEN key combinations, normally Windows shortcut keys, might have been reserved for an application.

Try clearing the corresponding Reserve Shortcut Key check boxes in the foreground application's PIF.

 If you are running Windows in real or standard mode, the wrong Video Mode option might be selected in the application's PIF.

Try selecting a higher video mode.

 If you are running Windows in 386 enhanced mode, it might not have enough memory to copy information to the Clipboard.

Close some applications and try other methods for increasing available memory.

 [Related Topics](#)



## **Options**

[No Screen Exchange](#)

[Video Mode](#)

## **Procedures**


[Freeing Memory with 386 Enhanced PIF Options](#)

[Freeing Memory with Standard PIF Options](#)


[Out-of-Memory Messages Appear](#)

## Wrong Information Pasted from the Clipboard

A number of situations can affect Windows' ability to paste information from the Clipboard into an application. Some of the common problems are these:

 The information on the Clipboard might not be in text format. (Windows cannot paste graphics into a non-Windows application.)


Try saving the information you want to paste as a separate file and then reading that file into the application.

 The application might be unable to accommodate the fastest pasting method.

If you are running Windows in 386 enhanced mode, the Allow Fast Paste option in the application's PIF is normally selected, since most applications can accommodate the fastest pasting method.

However, if the application cannot use the fastest method, it might not respond at all when you try to paste into it.

Try quitting the application, clearing the Allow Fast Paste check box in the application's PIF, restarting the application, and doing the paste again.

 Related Option

## You Are Having Communications Problems with Windows

The following two sections discuss common communications problems with Windows.

### **Using Serial Communications Ports Simultaneously**

On some systems, you might have problems simultaneously using the COM1 and COM3 ports or the COM2 and COM4 ports. If so, make sure the [386enh] section of your SYSTEM.INI file contains the following setting:

```
COMIrqSharing=true
```

This setting allows simultaneous use of the COM1 and COM3 (or COM2 and COM4) ports on some systems. However, many serial communications adapters do not allow these ports to be used simultaneously, regardless of the setting in your SYSTEM.INI file.


### **Using the COM3 and COM4 Serial Ports in 386 Enhanced Mode**

Some PC systems with COM3 and COM4 serial communications ports use I/O base port addresses that differ from the default addresses that Windows uses when running in 386 enhanced mode. This difference can cause Windows to deny access to a port that is actually available. To avoid this problem, make sure that all COMxBase= settings in the [386enh] section of the SYSTEM.INI file are set correctly for the serial port adapter(s) you are using. Many adapters use the values COM3Base=3E8h and COM4Base=2E8h instead of the default Windows values. See your hardware documentation for the correct values for your serial port adapter(s).

For additional information about the communications port settings, use Notepad to open the SYSINI2.TXT file in your Windows directory.


## Communications Application Gives Garbled Data

Depending on what type of communications application you are using, try the recommended solution to one of the following problems:


 When using a non-Windows communications application with Windows, you might see garbled data because the baud rate setting is too high.

Stop the data transmission. Check to make sure the remote computer can use a slower baud rate.

Change the baud rate setting in the communications application. Try running the application again.

 When using a communications application with Windows in 386 enhanced mode, you might also see garbled data.

You probably need to adjust the Device Contention options in Control Panel.

 [Related Procedure](#)

## Colors and Fonts Do Not Display Correctly

You are probably trying to run a Windows 2.x application in standard mode or 386 enhanced mode.

Exit Windows and start it again by typing `win/r` at the MS-DOS prompt and pressing ENTER.

This command starts Windows in real mode, which offers maximum compatibility with Windows 2.x applications.

## Windows Hangs at Startup with a Super VGA Adapter

Many Super VGA cards require an "EMMExclude=" statement to work properly in 386 enhanced mode. This is because they use an additional memory area in the adapter segment that is not detected by Windows. (Adapters that should not require an "EMMExclude=" statement include IBM, Paradise, and Video Seven.)

### **To add the "EMMExclude=" statement:**





- 1 Using a text editor, open your SYSTEM.INI file, which is located in your Windows directory.
- 2 Find the [386Enh] section of the file, and type the following line at the beginning of the [386Enh] section:  
EMMExclude=C400-C7FF
- 3 If this does not help, extend the exclusion range to CBFF.

**Super VGA Card**

A display card that offers IBM Video Graphics Array (VGA) resolution (640x480) as well as additional proprietary-extended display modes, such as 800 x 600. Many non-IBM VGA cards sold today have Super VGA capability.

## You Are Using an Unsupported VGA Card with Windows

The following are problems that might be related to a VGA card problem:

-  Windows Setup might hang during Disk 2 when it attempts to change to a graphics screen.
-  Windows might not start in one or more modes.
-  Screen might be garbled or show incorrect colors in Windows or in non-Windows applications.
-  Non-windows applications might not run properly. This includes the machine locking and "System Integrity Violation" errors.







### Before Troubleshooting

Make sure that Windows was installed using one of the VGA drivers provided in the Windows package. If not, run Setup and change to the standard VGA driver.

**Note:** If the problem only occurs when using a driver supplied by the manufacturer of the VGA card, contact that manufacturer.

### Troubleshooting Procedures




The following procedures might be used to troubleshoot possible video problems:

-  Some cards might work better with the VGA driver for "QuadVGA, ATI VIP VGA, and 82C441 VGAs." Try changing to this driver if the standard VGA driver isn't working. If the problem continues, reinstall the standard VGA driver and continue troubleshooting.
-  If the VGA card manufacturer has provided a driver that is compatible with Windows 3.0, try changing to this driver. If the problem continues, reinstall the standard VGA driver and continue troubleshooting.
-  When running in 386 enhanced mode, Windows might not properly detect the presence of the VGA card in memory and it might try to use the same addresses that the card is using. Most VGA cards use the address ranges A000-C7FF. A few might extend up to CA7F. For testing purposes, try using EMMExclude=A000-CBFF in the [386Enh] section of your SYSTEM.INI file.
-  Determine if the VGA card performs auto-switching. (See your video card's manual.) If it does, disable this feature.
-  Check the system for situations that might have led to a corrupt installation of Windows (that is, DOS version 4.01 commands, memory-resident programs, and so on).
-  Some VGA cards might require an updated BIOS to run properly with Windows. If the procedures in this topic fail to correct the video problems, contact the card's manufacturer.



## An Application Loses Its Display

If you are running Windows in 386 enhanced mode and you lose the display of a non-Windows application, the cause is often one of the following problems:

-  The application might require the Monitor Ports options to be selected in its PIF.  
Quit the application, select the appropriate Monitor Ports option in its PIF, and restart the application.
-  If the application switched to a higher video mode (for example, from text mode to graphics mode), there might not be enough memory to accommodate the new video mode.  
To prevent this problem from recurring, select a higher Video Memory option in the application's PIF. Also select the Retain Video Memory option in the application's PIF.
-  Related Options

## Options

[Monitor Ports](#)

[Retain Video Memory](#)







[Video Memory](#)

**display**


How the application appears on the screen.

## Out-of-Memory Messages Appear

You can free up memory in a number of ways, including the following:


-  Close other applications.
-  Run non-Windows applications full-screen instead of in a window (386 enhanced mode only). To switch an application from a window to full-screen, press ALT+ENTER.
-  Minimize Windows applications to icons. To minimize an active application to an icon, choose the Minimize command from the application's Control menu, or click the Minimize button.
-  Clear or save the Clipboard contents.
-  If you are using a desktop wallpaper, set the desktop wallpaper in Control Panel to None.
-  Change PIF options for the application you want to run.

See [Freeing Memory with Standard PIF Options](#) or [Freeing Memory with 386 Enhanced PIF Options](#) for information about changing PIF options.

-  Change PIF options for other non-Windows applications that you want to run simultaneously (386 enhanced mode only).

See [Freeing Memory with 386 Enhanced PIF Options](#) for information about changing PIF options.

**NOTE:** A few non-Windows applications use extended memory in a way that is incompatible with the version of HIMEM.SYS that comes with Windows 3.0. If the above methods do not help to free up extended memory for a non-Windows application, disable the HIMEM.SYS command line in your CONFIG.SYS file, restart your computer, start Windows in real mode (by typing win/r), and restart the application.

-  Related Topics

## **Option**

[Display Usage](#)

## **Procedures**

[Displaying Custom Wallpaper](#)

[Freeing Memory by Clearing the Clipboard](#)

[Minimizing a Window](#)

[Quitting Applications](#)

[Saving Clipboard Files](#)

## Freeing Memory with Standard PIF Options

If you are using Windows in *real mode* or *standard mode*, and you get an out-of-memory message when trying to run a *non-Windows application*, first try the techniques listed in [Out-of-memory Messages Appear](#). If you still get an out-of-memory message, consider changing the following *PIF* options:

<b>Option</b>	<b>Suggested Change</b>
Memory Requirements	<p>If Windows displays an out-of-memory message when you try to start the application, reduce the amount specified in Memory Requirements: KB Required.</p> <p>If Windows succeeds in starting the application, but the application subsequently displays its own out-of-memory message, you might need to free up more <i>memory</i> before starting Windows. See <a href="#">Streamlining Your CONFIG.SYS and AUTOEXEC.BAT Files</a> and <a href="#">Conserving Memory When Starting Memory-Resident Utilities</a>.</p>
XMS Memory	<p>If the application does not need <i>extended memory</i>, make sure that XMS Memory: KB Required and XMS Memory: KB Limit are set to 0.</p>
Prevent Program Switch	<p>Select this option to make more memory available to the application; however, if you do so, you will have to quit the application to return to Windows.</p>
No Screen Exchange	<p>Select this option to prevent Windows from allocating memory for copying information onto the <i>Clipboard</i> with PRINT SCREEN or ALT+PRINT SCREEN. This makes more memory available for the application; however, you will not be able to copy this application's display onto the Clipboard.</p>
Video Mode	<p>Select Video Mode: Text to reduce the amount of memory Windows sets aside for the application's display. This makes more memory available for the application; however, if you change modes while using the application, you might not be able to switch away from the application.</p>

If you still get out-of-memory messages, see [Streamlining Your CONFIG.SYS and AUTOEXEC.BAT Files](#) and [Conserving Memory When Starting Memory-Resident Utilities](#) for information on minimizing how much memory is already in use when you start Windows.

 Related Options

## **Options**

[Memory Requirements](#)

[No Screen Exchange](#)

[Prevent Program Switch](#)

[Video Mode](#)

[XMS Memory](#)

## Freeing Memory with 386 Enhanced PIF Options

When Windows is running in 386 enhanced mode, Windows applications and non-Windows applications share memory resources. The more memory you give to one application, the less is available to others. If you get an out-of-memory message when trying to start an application, first try the techniques listed in [Out-of-memory Messages Appear](#).

If you still get an out-of-memory message, try changing that application's PIF. You can free up memory for an application by changing the following settings in its PIF:

<b>Option</b>	<b>Suggested Change</b>
Memory Requirements	If Windows displays an out-of-memory message when you try to start the application, reduce the amount specified in the KB Required option.  If Windows succeeds in starting the application, but the application subsequently displays its own out-of-memory message and then terminates, increase the amount specified in the KB Required and KB Desired options. (An application might also run out of memory if it doesn't have enough <u>extended memory</u> or <u>expanded memory</u> . If you suspect this is the case, try increasing the amounts in the XMS Memory and EMS Memory options.)
Display Usage	Select Full Screen instead of Windowed. Windowed applications require more memory to run.
Execution	Select the Exclusive option to suspend other applications while this application is in the foreground. This makes more memory available to the application, but prevents other applications from running simultaneously.
Display Options	Select the Video Memory: Text option if you are sure that you will use only text mode while running an application. Text mode requires less memory than the other modes. Clear the Retain Video Memory check box to release reserved memory to the system.

If you still get out-of-memory messages after changing the application's PIF, try changing the PIFs for other applications you plan to run at the same time. You can free up additional memory for an application by changing the following settings in other applications' PIFs:

<b>Option</b>	<b>Suggested Change</b>
Memory Requirements	Reduce the amount specified in other applications' KB Desired options. (Do not reduce it so much that the other applications can't run effectively.)
Display Usage	Select other applications' Full Screen options.
Execution	Clear other applications' Background check boxes to prevent them from running in the background. This makes more memory available to the application you want to run, but prevents the other applications from running at the same time.  You might want to do this to prevent particular applications from running in the background while others continue. To prevent all applications from running in the background, it is much easier to simply select the foreground application's Exclusive option.
Lock Application Memory	Clear other applications' Lock check boxes (Lock Application Memory, XMS Memory: Locked, and EMS Memory: Locked) to release memory to the system. This makes more memory available to the application you want to run, but might slow down the application(s) for which you clear the Lock options.

If you still get out-of-memory messages, see [Streamlining Your CONFIG.SYS and AUTOEXEC.BAT Files](#) and [Conserving Memory When Starting Memory-Resident Utilities](#) for information on minimizing



how much memory is already in use when you start Windows.



Related Options

## **Options**

[Display Usage](#)

[EMS Memory](#)

[Execution Background](#)

[Execution Exclusive](#)

[Lock Application Memory](#)

[Memory Requirements](#)

[Video Memory](#)


[XMS Memory](#)

## Streamlining Your CONFIG.SYS and AUTOEXEC.BAT Files




You can make more conventional memory available to Windows, and to applications running with Windows, by minimizing the amount of memory already in use when you start Windows. Windows can use only the memory that is available at startup time.

When you start your computer, the settings in your CONFIG.SYS and AUTOEXEC.BAT files can start device drivers, utilities, and other programs that use memory. You can make more memory available to Windows by removing unnecessary commands and utilities from these files.


### Basic Recommendation

 Avoid starting unnecessary memory-resident software from your CONFIG.SYS and AUTOEXEC.BAT files.


### Advantages

-  Can improve your system's speed.
-  Makes more memory available to non-Windows applications that you start from Windows.
-  Fairly easy to do.

### Disadvantages

 To effectively streamline your CONFIG.SYS and AUTOEXEC.BAT files, you should know the function of each of the command lines in those files.



Because the information in these files can determine how your computer starts and runs, you should not change these files unless you know what effect your changes might have. See [Your CONFIG.SYS File](#) and [Your AUTOEXEC.BAT File](#) for specific information on the command lines.

 When you stop using a utility, you lose the features that the utility provides.



**CAUTION:** Use care when changing your CONFIG.SYS and AUTOEXEC.BAT files. If you incorrectly change or disable some values, your system might not function properly. Therefore, it is important to make a system diskette that contains a backup copy of these files.

### To streamline your CONFIG.SYS and AUTOEXEC.BAT files:

- 1 Make a system startup disk that includes a backup copy of both your CONFIG.SYS file and your AUTOEXEC.BAT file. 
- 2 Use a text editor such as Notepad to open and edit each file.
- 3 Edit the command lines in each file.  
See [Your CONFIG.SYS File](#) and [Your AUTOEXEC.BAT File](#) for specific information on the command lines.
- 4 Disable any command lines for unnecessary device drivers and utilities. 
- 5 Save the file as text only.
- 6 When you finish editing both files, restart your computer.

If your system does not start properly, insert the system startup disk you created in step 1 in drive A, and start your computer again. If you know which command line(s) are causing the problem, edit the appropriate file (CONFIG.SYS or AUTOEXEC.BAT) on your hard disk, and restart your computer. Or, to start over, copy the backup version of the file from the startup disk to your hard disk.

If you use the REM command to disable command lines in your CONFIG.SYS file, and you are using a version of MS-DOS earlier than 4.0, you'll see a message such as "Unrecognized command in CONFIG.SYS" when you start your computer. When you are sure that your computer works properly with the command lines disabled, you might want to delete the disabled command lines to avoid the message.



Related Procedures

## **Procedures**

[Making System Diskettes](#)

[Starting Applications](#)

**example**

If you disable the RAMDrive command line in your CONFIG.SYS file, you will no longer have a RAM disk, and you will thereby lose the benefits associated with a RAM disk.

**hint**

You can make a system startup disk by starting File Manager and then choosing Make System Diskette from the Disk menu. Then copy your current CONFIG.SYS and AUTOEXEC.BAT files to the disk. (These files are normally located in the root directory of your first hard disk, which is usually drive C.)



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**hint**

When streamlining your CONFIG.SYS and AUTOEXEC.BAT files, it is better to disable command lines than to delete them. That way, if you accidentally disable a command line you really need, you can restore it easily. To disable a command line, insert the MS-DOS command REM (for "remark") at the beginning of the line. For example, to disable the following CONFIG.SYS command line:

```
device = c:\device\mouse.sys
```

you would insert REM in front of it, as follows:


```
rem device = c:\device\mouse.sys
```



## Your CONFIG.SYS File

Your CONFIG.SYS file is a text file that defines device drivers and specifies your MS-DOS configuration. For example, a typical CONFIG.SYS file might specify the location of the MS-DOS file COMMAND.COM, define an extended memory manager, and specify how many files an application can have open at once. MS-DOS runs the command lines in your CONFIG.SYS file before those in your AUTOEXEC.BAT file. (Your CONFIG.SYS file is located in the root directory of your first hard disk, which is usually drive C.)

### Basic Recommendations

-  Disable command lines for any unnecessary device drivers.

Your CONFIG.SYS file should define only device drivers that you absolutely need. (Device drivers are defined using the DEVICE command.)


To disable a command line, insert the MS-DOS command REM (for "remark") at the beginning of the line. For example, to disable the following CONFIG.SYS command line:

```
device = c:\device\mouse.sys
```

you would insert REM in front of it, as follows:

```
rem device = c:\device\mouse.sys
```

Do not disable the HIMEM.SYS or SMARTDRV.SYS command lines. When you install Windows, Setup adds those command lines to your CONFIG.SYS file if your system needs those device drivers.

-  Your CONFIG.SYS file should contain a FILES command line that looks like the following:

```
files = 30
```

The FILES command specifies the maximum number of files each application can have open at a time. The larger the number you specify for FILES, the more memory is used up. In general, you should set FILES to 30.

Setting FILES to a value higher than 30 allows each application to open more files, but uses up more conventional memory.

There is no significant advantage to setting FILES to a value lower than 30. Besides a value below 30, Windows and applications might not run.


-  Your CONFIG.SYS file should contain a BUFFERS command line that looks like the following:

```
buffers = 20
```


The BUFFERS command line sets the number of disk buffers that MS-DOS allocates in memory when your computer starts. These buffers allow MS-DOS to improve disk access time in certain cases. The larger the number you specify for BUFFERS, the more conventional memory is used up. In general, you should set BUFFERS to a value from 10 to 20.

If you are using SMARTDrive, you can conserve conventional memory by setting BUFFERS to 10.


Setting BUFFERS to a value higher than 20 might improve disk access time in some cases (but not as much as other methods, such as using SMARTDrive). However, doing so will use more memory.

-  If your CONFIG.SYS file includes the LASTDRIVE command, you can save some memory by setting LASTDRIVE to a letter such as j or k, rather than to z.

If you use a network, this might limit the number of network disk drives you can use simultaneously.

-  If your CONFIG.SYS file contains a SHELL command that specifies your environment space, you can save some memory by specifying a smaller environment.

This will limit how many environment variables you can define using the MS-DOS SET command.

-  If you are using MS-DOS 3.3 or later, your CONFIG.SYS file should contain a STACKS command line that looks like the following:






```
stacks = 0,0
```

## Your AUTOEXEC.BAT File

Your AUTOEXEC.BAT file is a special MS-DOS batch file. Like any batch file, it lists MS-DOS commands; when you run the batch file, MS-DOS executes the commands in the file. Unlike other batch files, MS-DOS automatically executes the commands in your AUTOEXEC.BAT file immediately after it completes the commands in your CONFIG.SYS file. (Your AUTOEXEC.BAT file is located in the root directory of your first hard disk, which is usually drive C.)

Typically, an AUTOEXEC.BAT file starts memory-resident utilities such as a network and sets up environment variables that are used later by applications. In addition, your AUTOEXEC.BAT file might set your DOS prompt or start pop-up programs such as Borland's SideKick.

### Basic Recommendations


-  If you use a mouse only with Windows and Windows applications, you might want to disable any command lines that start and enable mouse-driver software such as MOUSE.COM.
-   Disable command lines that start pop-up programs or other memory-resident software. Instead of starting some memory-resident programs from AUTOEXEC.BAT, you might want to start them from within Windows. For more information on running memory-resident software, see [Conserving Memory When Starting Memory-Resident Utilities](#).
-  Leave intact any command lines that start or enable a network.
-  If you have a RAM disk, you might want to set your TEMP variable to the RAM disk. Doing so can speed up applications that store temporary files in the directory specified by the TEMP variable. For example, if your RAM disk has the drive letter E, you might enter the following command lines, which create the directory \TEMP on the RAM disk, then set the TEMP variable to that directory:


```
mkdir e:\temp
set temp = e:\temp
```

## Conserving Memory When Starting Memory-Resident Utilities

You can make more conventional memory available to Windows, and to applications running with Windows, by minimizing the amount of memory already in use when you start Windows. Windows can use only the memory that is available when you start it. For example, if memory-resident software is already using memory, then Windows cannot use that memory.

You'll probably want to start some memory-resident utilities (such as network drivers) before starting Windows. This ensures that the utilities will be available to all applications you run with Windows. You can use the following techniques to conserve memory when starting memory-resident utilities:


 If a particular non-Windows application needs the memory-resident utility, you can start both the utility and the application from the same batch file. This gives the application access to the utility, and does not take memory away from other applications. For more information about running batch files with Windows, see Creating PIFs for Batch Files (the related procedure for this topic).

 If only a Windows application uses the memory-resident utility, you might want to start the utility from the special batch file WINSTART.BAT. WINSTART.BAT is a normal batch file, except that Windows automatically runs it after starting in 386 enhanced mode. When you start a utility from WINSTART.BAT, that utility will be available to Windows applications, but not to non-Windows applications. This prevents the utility from taking memory away from non-Windows applications. For example, some Windows programs require the memory-resident IBM Personal Communications/3270 utility. Since this utility uses a fair amount of memory, but is only needed by particular Windows programs, WINSTART.BAT would be an ideal way to start it.

 [Related Procedure](#)

## A Logitech Mouse Isn't Working Properly

Occasionally, when a Logitech mouse is used with Windows 3.0, the pointer moves erratically or not at all. This could be due to one of the following:

 Setup changed the path from your Logitech mouse driver to the driver included with Windows. To determine if this is the problem, check your mouse-driver command line in either your CONFIG.SYS file or your AUTOEXEC.BAT file.

If your Logitech mouse driver is MOUSE.SYS, the command line will be in your CONFIG.SYS file. If the MOUSE.SYS command line is similar to the following, your system is being directed to the wrong mouse driver:

```
device = c:\windows\mouse.sys
```

If your Logitech mouse driver is MOUSE.COM, the command line will be in your AUTOEXEC.BAT file. If the MOUSE.COM command line is similar to the following, your system is being directed to the wrong mouse driver:

```
c:\windows\mouse.com
```

Change the command line so that it specifies the directory that contains your original Logitech mouse driver, rather than the Windows directory.

## The Mouse Doesn't Work with a Non-Windows Application

You can use the mouse with a non-Windows application only when running the application in a full-screen display. When you run the application in a window, the mouse performs Windows tasks, such as moving or resizing the window; it does not provide input to the application running in that window.

If the mouse does not work when you run the application in a full-screen display, you probably don't have a mouse driver installed for non-Windows applications. (Windows has its own built-in mouse driver, which enables you to use the mouse with Windows and Windows applications.) Check your CONFIG.SYS and AUTOEXEC.BAT files to ensure that your mouse driver is installed properly.

## Your System Hangs When You Run Setup

If your system halts (in other words, stops responding) before Setup has finished installing Windows, your system probably includes incompatible software or hardware.

To eliminate the problem, try each of the following steps in order. As soon as you successfully install Windows, you can skip the unfinished steps.

### To eliminate Setup problems:

- 1 Make sure you are using the correct Setup options.

Restart Setup by typing `setup /i` at the MS-DOS prompt. Then carefully check the configuration options that Setup displays on the second Setup screen. You must select the options that match your computer's configuration.

If Setup still halts, restart your computer and try Step 2.

- 2 [Simplify your AUTOEXEC.BAT and CONFIG.SYS files.](#)

Simplifying these files can eliminate memory-resident software that is incompatible with Windows.

If Setup still halts, restart your computer and try Step 3.

- 3 [Make sure you are running the correct version of MS-DOS.](#)

If Setup still halts, restart your computer and try Step 4.

- 4 Try setting up Windows without a mouse or network.

Type `setup /i` to run Setup. Then choose "None" for the mouse and network options, even if your system includes a mouse or network.

These options can sometimes cause incompatibilities with Setup. After Windows is successfully installed, you can add support for both the mouse and the network from within Windows. See [Changing System Settings](#) (the related procedure).



Related Procedure

## Setup Didn't Find Some Non-Windows Applications

After you have installed Windows, you can set up applications Setup didn't find by using either Program Manager or Setup. (Use Program Manager if you are adding only one or two applications. Setup is easier for adding several applications.)



Related Topics

## **Procedures**

[Adding Items to a Group](#)

[Setting Up Applications](#)



## You Can't Start Windows

If your system halts (in other words, stops responding) when you try to start Windows, it is likely that your system includes hardware or software that is incompatible with Windows. The solution depends on the type of system you have.

### To get Windows running on your system:

- 1 [Make sure you are using the correct Setup options.](#)

If your system still halts, restart it and try Step 2.

- 2 Try running Windows in [real mode](#).

Type `win /r` to start Windows in real mode.

If your system halts when you type `win /r`, you probably still have the wrong video display or system type selected. Repeat Step 1 again.

If Windows starts successfully when you type `win /r`, but your system still halts when you type `win`, restart your system and try Step 3.

- 3 [Simplify your AUTOEXEC.BAT and CONFIG.SYS files.](#)

If your system still halts, restart it and try Step 4.

- 4 [Make sure HIMEM is using the correct system type.](#)

If your system still halts, restart it and try Step 5 (for 80386 or 80486 systems only).

- 5 [Add an EMMEXCLUDE line to your SYSTEM.INI file.](#)

## Making Sure You Are Using the Correct Setup Options

### To check Setup options:

- 1 Run Setup by typing setup /i at the MS-DOS prompt.
- 2 Carefully check the configuration options that Setup displays on the second Setup screen.  
To get Windows to work properly, you must select the options that match your computer's configuration.  
Check the Hardware Compatibility List, included in your Windows package, for your system type. If the Hardware Compatibility List has an asterisk by your system type, you must make sure that the correct system type is selected in Setup.
- 3 After completing Setup, choose Reboot, or return to DOS.
- 4 Type win to start Windows.



Related Procedure

## Making Sure HIMEM Is Using the Correct System Type

### To make sure HIMEM is using the correct system type:

- 1 Using a text editor, open your CONFIG.SYS file and find the HIMEM.SYS command line, which starts the HIMEM memory manager.
- 2 Add the /M switch by typing **/m:** and the number for your system type at the end of the HIMEM.SYS command line.

The /M switch tells HIMEM what type of system you have. Normally, HIMEM automatically detects your system type. However, HIMEM might be unable to detect some types of computers; this could cause your system to halt when you start Windows.

The following table lists the system-type numbers to specify after the /M switch:

<b>Number</b>	<b>System Type</b>
1	IBM PC/AT or 100 percent compatible
2	IBM PS/2
3	Phoenix Cascade BIOS
4	HP Vectra (A and A+)
5	AT&T 6300 Plus
6	Acer 1100
7	Toshiba 1600 and 1200XE
8	Wyse 12.5 MHz 286

For example, if your system is a Toshiba 1200XE, your HIMEM.SYS command line might look like the following:

```
device = c:\himem.sys /m:7
```

If your system is a PC-compatible computer not listed above, try using the /m:3 setting.

- 3 Save the changes to your CONFIG.SYS file.
- 4 Press CTRL+ALT+DELETE to restart your system. Then type win to start Windows.

## Adding an EMMEXCLUDE Line to Your SYSTEM.INI File



This procedure is for 80386 or 80486 systems.

### **To add an EMMEXCLUDE line to your SYSTEM.INI file:**

- 1 Using a text editor, open your SYSTEM.INI file in your Windows directory.
- 2 Find the [386Enh] section of the file, and type the following line at the beginning of the [386Enh] section:  
EMMEXCLUDE = C000-D000
- 3 Save the SYSTEM.INI file as text only.
- 4 Type win to start Windows.

## Windows Starts in Real Mode When You Type win

If Windows starts in real mode when you type **win**, one of the following might be the problem:

-  The HIMEM memory manager is not properly installed.
-  Your CONFIG.SYS file is starting utilities that take up too much memory.

Try each of the following steps in order. As soon as Windows starts in the mode you want, you can skip the remaining steps.

**To get Windows to run in standard or 386 enhanced mode:**

- 1 [Make sure your CONFIG.SYS file contains a command line for HIMEM.SYS.](#)
- 2 [Disable any device drivers that might use extended memory.](#)
- 3 [Disable your graphics card's auto-switching capabilities.](#)

## Making Sure Your CONFIG.SYS File Contains a Command Line for HIMEM.SYS

For Windows to use your system's extended memory, your CONFIG.SYS file must contain a device command line for the HIMEM memory manager.

### To check your CONFIG.SYS file for a HIMEM command line:

- 1 Using a text editor, open your CONFIG.SYS file and look for a command line such as the following:  
device = c:\himem.sys
- 2 If your CONFIG.SYS file does not contain a HIMEM.SYS command line, rerun Setup by typing setup at the MS-DOS prompt.
- 3 If your CONFIG.SYS file does contain a HIMEM.SYS command line, make sure the path is correct. The HIMEM.SYS file must be located in the directory that the command line specifies.
- 4 Press CTRL+ALT+DELETE to restart your system, and try running Windows again.

To tell Windows to start only in standard mode, type win /s. Windows will not start if it cannot start in standard mode.


To tell Windows to start only in 386 enhanced mode, type win /3. Windows will not start if it cannot start in 386 enhanced mode.

If Windows does not start in the mode you want, disable any device drivers that might use extended memory.

## Disabling Any Device Drivers that Might Use Extended Memory

Although your system has at least 2 megabytes of memory, your CONFIG.SYS file might start device drivers that use extended memory. If so, Windows might not run in standard mode or 386 enhanced mode.

### To disable device drivers:

- 1 Open your CONFIG.SYS file with a text editor.
  - 2 Disable any DEVICE commands for device drivers that might be taking up extended memory.   
Do not disable the HIMEM.SYS command line.
  - 3 Save the CONFIG.SYS file as text only.
  - 4 Press CTRL+ALT+DELETE to restart your system, and try running Windows again.
- If Windows does not start in the mode you want, [disable your graphics card's auto-switching capabilities](#).



Related Procedure

## Disabling Your Graphics Card's Auto-switching Capabilities

**To start Windows in the mode you want by disabling your graphics card's auto-switching capabilities:**

1 Disable auto-switching.

Normally, to disable auto-switching, you must change a hardware switch located on the graphics card. Follow the instructions in the documentation that accompanied your graphics card.

2 After disabling the graphics card's auto-switching capability, restart your system by turning the power off and on again.


3 Try running Windows again.




## A Key or Key Combination Gives Unexpected Results

When you press a key or key combination and something happens other than what you expected, Windows or another running application is probably already using the key combination for another purpose.


Here are some common key-related problems and recommended solutions:

 You press a key combination that should perform a function in an application, but it instead performs a Windows function (for example, you unexpectedly switch to the next application).


You are probably pressing a Windows shortcut key. If you want that key combination to work differently when using a particular application, select the Reserve Shortcut Keys option for that shortcut key in the application's [PIF](#).

 You press a Windows shortcut key such as ALT+TAB, but something happens other than the normal Windows function.


The key combination you pressed has probably been reserved for an application and no longer works as a Windows navigation tool. Check the PIF of the foreground application to see if a Windows key combination has been reserved for that application.

 You press a key combination and unexpectedly switch to a particular application ([386 enhanced mode](#) only).


If pressing a particular key combination always switches to the same application, that key combination is probably assigned to that application as an application shortcut key. Check that application's PIF. If you want to use the key combination for any other purpose, you need to assign the application a different application shortcut key.

 If you are running Windows in 386 enhanced mode, and you hear a beep whenever you press a key while using the application, Windows might have suspended that application. This might happen if, for example, you try to display the application in a window, but it cannot run in a window.


To resume using the application, press ALT+ENTER to return it to a full-screen display.

 If you are running Windows in 386 enhanced mode and the application's title contains the word "Select" or "Mark," Windows is expecting you to select information for transfer onto the [Clipboard](#).

To return to the application, press ESC, click the mouse button in the application window, or complete the copy operation.




 If you are running Windows in 386 enhanced mode and the application's title contains the word "Scroll" or "Mark," Windows is expecting you to use the keyboard to scroll the information in the application's window.

To return to the application, press ESC.

 [Related Option](#)

## Your System Stops Responding or Exits Unexpectedly

If your current application, Windows, or your computer stops responding, the application or Windows terminates unexpectedly, or your computer restarts unexpectedly, the cause might be:

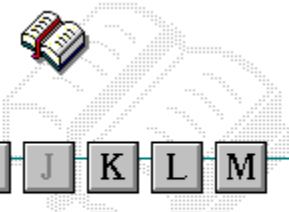
-  You are running an older Windows application that is incompatible with Windows 3.0.  
Try running the application after starting Windows in real mode. To start in real mode, quit Windows and type **win/r** at the MS-DOS prompt, and then press ENTER.
-  Your computer is connected to a network that does not support Windows, and you are running a Windows or non-Windows application that accesses the network directly.
-  You are using hardware that is incompatible with Windows. See the Hardware Compatibility List supplied with Windows for more information on hardware compatibility.

Sometimes, you can get around a hardware incompatibility by adjusting settings in your SYSTEM.INI file. For more information about SYSTEM.INI, use Notepad to open the SYSINI.TXT file.



# Windows Glossary

Click a button or term.



- A
- B
- C
- D
- E
- F
- G
- H
- I
- J
- K
- L
- M
- N
- O
- P
- Q
- R
- S
- T
- U
- V
- W
- X
- Y
- Z

## Windows Glossary

Click a button or term.



A B C D E F G H I J K L M

N O P Q R S T U V W X Y Z

### A

[386 enhanced mode](#)

[active](#)

[active printer](#)

[animation](#)

[application](#)

[application icon](#)

[application window](#)

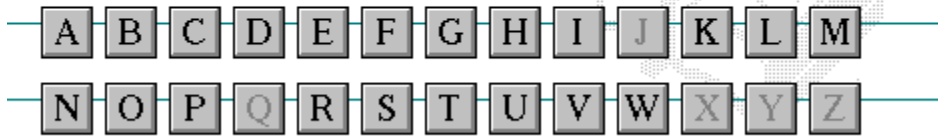
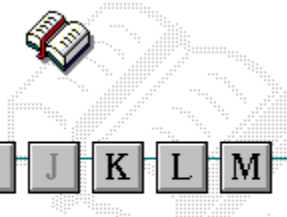
[arrow keys](#)

[associate](#)

[AUTOEXEC.BAT](#)

## Windows Glossary

Click a button or term.



### B

[<< button](#)

[>> button](#)

[Back button](#)

[base-level synthesizer](#)

[batch file](#)

[baud rate](#)

[bitmap](#)

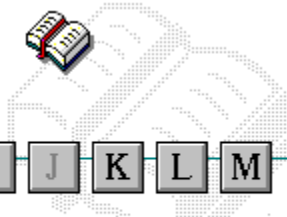
[branch](#)

[browse](#)

[byte](#)

# Windows Glossary

Click a button or term.



[A](#) [B](#) [C](#) [D](#) [E](#) [F](#) [G](#) [H](#) [I](#) [J](#) [K](#) [L](#) [M](#)

[N](#) [O](#) [P](#) [Q](#) [R](#) [S](#) [T](#) [U](#) [V](#) [W](#) [X](#) [Y](#) [Z](#)

## C

[cascading menu](#)

[CD-ROM](#)

[channel](#)

[check box](#)

[choose](#)

[Clipboard](#)

[close](#)

[collapse](#)

[command](#)

[command button](#)

[command line](#)

[complementary color](#)

[compound device](#)

[CONFIG.SYS](#)

[Contents button](#)

[Control menu](#)

[Control-menu box](#)

[conventional memory](#)

[cutout](#)



D

data bits

default button

default printer

desktop

desktop pattern

destination directory

device contention

device driver

dialog box

directory path

Directory Tree

Directory Tree window

directory window

disk-drive icon

display box

document

document file

document window

DOS

drag

drop-down list box





E

error-checking

expand

expanded memory

extended memory

extended synthesizer

extension



F

file

file information line

flow control

font

font size

format

full-screen application



G

General MIDI Mode standard

group

group icon

group window



H

History button

hotspot

hue

HyperGuide button bar



icon

insertion point

International MIDI Association



No defined terms.



K

keymaps

keyword

kilobyte



list box

local printer

local queue

luminosity





## M

maximize

Maximize button

Media Control Interface

memory

menu

menu bar

menu command

menu name

menu title

MIDI

MIDI file

MIDI Mapper

MIDI sequencer

MIDI Manufacturer's Association (MMA)

minimize

Minimize button

movie file

MSCDEX

multimedia extensions

Multimedia PC

multitasking



network printer

network queue

network server

non-Windows application



open

option button



P

parity

palette

patch

patchmaps

pathname

picture elements

pixels

playlist

pointer

port

print option

printer-driver file

printer font

printer queue information line

program file

program information file (PIF)

program item

program item icon



No defined terms.



R

RGB components

read-only

real mode

Restore button

root directory



S

sample

saturation

scaled font size

screen font

screen saver

scroll arrow

scroll bar

scroll box

Search button

select

selection cursor

serial port

shortcut key

shrink

simple device

solid color

source directory

spin box

standard mode

status bar

stop bits

synthesizer



Task List

text box

text file

title

title bar

topic

track





Up button



vector font

virtual memory

volume label



waveform

WAVE format

wildcard characters

window

window border

Windows application

wrap



No defined terms.



No defined terms.



No defined terms.

**386 enhanced mode**

Provides access to the virtual memory capabilities of the Intel 80386 processor. With virtual memory capabilities, Windows applications can use more memory than is physically available. Enhanced mode also allows for multitasking of non-Windows applications.

**active**

Describes the selected window or icon that you are currently working with. Windows always applies the next keystroke or command you choose to the active window. If a window is active, it appears in front of all other windows on the desktop, and its title bar changes color to differentiate it visually from other windows. If an icon is made active, its Control menu appears.

Inactive is the opposite of active and describes windows or icons on the desktop that are not selected.



**active printer**

An installed printer that has been assigned to a printer port using Setup or Control Panel. More than one printer can be set up to work on a single port, but only one can be active, since only one printer can be physically connected to the port at a time.

An inactive printer is an installed printer that is not currently connected to the printer port.

**animation**

The display of a series of graphic images, simulating motion. You can play animation files (for example, files with the.MMM extension) with the Media Player accessory. Animations are also called movies.

**application**

A computer program used for a particular kind of work, such as word processing. This term is often used interchangeably with "program."

**application icon**



Alarm Clock

An icon that represents an application that is running.

**application window**

The main window for an application. It contains the application's menu bar and main workspace. An application window may contain multiple document windows.

**arrow keys**

The four arrow keys on your computer keyboard. These keys move the cursor or pointer on your screen to locations you choose. Each arrow key moves the cursor or pointer in the direction of the arrow on the key. Each arrow key is named for the direction in which arrow points: UP ARROW, DOWN ARROW, LEFT ARROW, and RIGHT ARROW.

**associate**

To assign files that have the same extension to a program. When you choose a file with the specified extension, the associated application runs with the file loaded.

**AUTOEXEC.BAT**

Batch file that lists MS-DOS commands. MS-DOS automatically carries out the commands in your AUTOEXEC.BAT file when you turn on your computer. The file is located in the root directory of your first hard disk, which is usually drive C.

Typically, an AUTOEXEC.BAT file starts memory-resident utilities such as a network and sets up environment variables that are used later by applications. In addition, your AUTOEXEC.BAT file might set your MS-DOS prompt or start pop-up programs such as Borland's SideKick.



**<< button**



Displays the previous topic in a series of topics, until you reach the first topic in the series. Then the button is dimmed. Use this button when you want to backtrack through topics the way they are organized in HyperGuide.

**>> button**



Displays the next topic in a series of topics, until you reach the last topic in the series. Then the button is dimmed. Use this button to move from topic to topic in the recommended order.

**Back button**

Displays the last topic you viewed. HyperGuide moves back one topic at a time, in the order in which you viewed them.

**base-level synthesizer**

One of the two types of synthesizers accommodated by Windows.

MIDI files authored for Windows include two versions of a song: one version for base-level synthesizers and another version for extended synthesizers. The distinctions between base-level and extended synthesizers are based on the number of instruments and notes the synthesizer can play.

**batch file**

A file that runs a sequence, or "batch," of commands when you type its filename. All filenames of batch files end with the extension .BAT, even though you don't have to type this extension to run the batch file.

**baud rate**

Signalling speed measured by the number of signals per second.

**bitmap**



An image stored as an array of bits.

**branch**



A segment of the Directory Tree, representing a directory and any subdirectories it contains.



**browse**

To look through files and directories. In some dialog boxes, the Browse button shows a list of files and directories from which you can choose.

**byte**

The amount of memory space (normally 8 bits) that a computer needs to represent a single character or word.

## **cascading menu**



A menu that opens from a command on another menu.

**CD-ROM**

Compact Disc-Read Only Memory. An optical data-storage technology that allows large quantities of data (such as animations, images, music, and sound) to be stored on a compact disc similar to discs used by the music industry.

**channel**

MIDI uses channels to send messages to individual devices within a MIDI setup. There are 16 MIDI channel numbers. Devices in a MIDI setup can be directed to respond only to messages marked with a channel number specific to the device.

**check box**



A small square box that appears in dialog boxes and can be selected or cleared. When the check box is selected, an X appears in the box.

**choose**

To use key combinations or your mouse to carry out a command in Windows. You often choose a command after you have selected an item or made it active.

## **Clipboard**



A temporary storage area in memory, used to transfer information. You can cut or copy information onto the Clipboard and then paste it into another document or application.



**close**

To reduce a document window or application window to an icon or, in some cases, to remove it from the desktop. You close a window by double-clicking the Control-menu box or choosing the Close command from the Control menu. When closing an application window, you can choose to save or abandon changes to the current document before you close it.

**collapse**

To hide a level of directory information in the Directory Tree window. When you first start File Manager, all directories but the root directory are collapsed.

**command**



A word or phrase, usually found in a menu, that you choose to carry out an action.

**command button**

A button in a dialog box that carries out or cancels the selected action. Two common command buttons are OK and Cancel. The button that carries out the action will often have a label that describes it (for example, Open, Create, Install). Another dialog box appears when you choose a command followed by ellipses.

**command line**

Information given to MS-DOS that specifies a command and all the pertinent information to carry it out. For example, to start Windows, you type **win** at the MS-DOS prompt.

**complementary color**

The color exactly opposite a color on the RGB color wheel. For example, the complementary color of blue is yellow.

**compound device**

Devices, such as the waveform audio driver, that have an associated file and require a filename specification when opened.

**CONFIG.SYS**

A file that defines device drivers and specifies your MS-DOS configuration. For example, a typical CONFIG.SYS file might specify the location of the MS-DOS file COMMAND.COM, define an extended memory manager, and specify how many files an application can have open at once. MS-DOS runs the commands in the CONFIG.SYS file each time you turn on your computer. Your CONFIG.SYS file is located in the root directory of your first hard disk, which is usually drive C.



**Contents button**



Displays the HyperGuide contents.

## Control menu

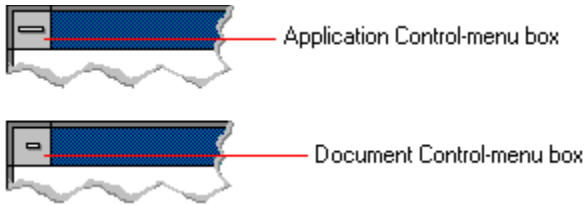


The menu in the upper-left corner of a window. The Control menu appears on every application that runs in a window and on some non-Windows applications. Document windows, icons, and some dialog boxes also have Control menus.

Control menu commands move, change the size of, and close windows. You can also switch to Task List by using the Control menu. For non-Windows applications, Control menu commands transfer information and perform other functions, depending on the application.

## Control-menu box

The box located in the upper-left corner of a window. Clicking the Control-menu box opens the Control menu for the window.



**conventional memory**

The first 640K of memory that MS-DOS uses to run applications. Most computers have at least 256K of conventional memory and can accommodate up to 640K of conventional memory.

**cutout**



A portion of a Paintbrush drawing you select with the Scissors or Pick tool.

**data bits**

The bits in each package of data sent between two computers during telecommunication. Most characters are transmitted in 7 or 8 data bits.

**default button**



The command button in some dialog boxes that is automatically selected or chosen by Windows as the most logical or safest choice. The default button has a bold border, indicating that it will be chosen if you press ENTER. You can override a default button by choosing Cancel or another command button.

**default printer**

The printer that Windows applications automatically use when you choose the Print command. You can have only one default printer, which must also be the active printer on the port. The printer you use most often should be made the default printer.



**desktop**

The background of your screen, on which windows, icons, and dialog boxes appear.

**desktop pattern**

A geometric pattern that appears across your desktop. You can design your own pattern or choose one of the patterns provided by Windows.

**destination directory**

The directory to which you intend to copy or move one or more files.





**device contention**

When several applications simultaneously request use of a peripheral device, such as a printer or modem.

Windows automatically handles device contention when all the applications are Windows applications. When one of the applications is a non-Windows application, however, the conflict is handled according to the options you select in the 386 Enhanced dialog box. This dialog box appears when you choose the 386 Enhanced icon in Control Panel.

**device driver**

Tells Windows how to control a piece of hardware. Using Control Panel, you can install device drivers for your:

-  Display (monitor)
-  Keyboard
-  Mouse
-  Network

**dialog box**

A rectangular box that either requests or provides information. Many dialog boxes present options that you must choose from before Windows can carry out a command. Some dialog boxes present warnings or explain why a command can't be completed.

## **directory path**



The directions to a directory or file within your system.

In the illustration, C:\ART stands for the ART directory on drive C. Any commands you use affect the files and subdirectories in this directory.

When you want to specify a file, make sure the filename follows the directory path.

## Directory Tree



A graphic display of a disk's directory structure. The directories on the disk are shown as branching from the disk's root directory.



**Directory Tree window**



A File Manager window that shows the complete branching structure of the selected disk drive.

**directory window**



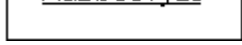
A File Manager window that lists the contents of a specific directory. The directory window shows all the files and subdirectories contained in the directory.

**disk-drive icon**



An icon in the Directory Tree window of File Manager that represents a disk drive on your system. Different icons depict floppy disk drives, hard disk drives, RAM drives, CD-ROM drives, and network disk drives.

**display box**



A display box is not an option, but a type of text box that shows an example of another option you have selected, in this case a sample of the 10 pt, underlined, Helvetica font.

**document**

Whatever you create with an application, including information you enter, edit, view, or save. A document can be a business report, a spreadsheet, a picture, and so on.

**document file** 

Files that are associated with an application. You can start an application and open the associated file by choosing a document file icon.

**document window**



A window inside an application window. Each document window contains a single document or other data file. There can be more than one document window inside an application window.

**DOS**

Disk Operating System, typically known as MS-DOS (Microsoft) or PC-DOS (IBM). This is the underlying software that must exist for your PC to operate.



**drag**

A mouse move. You drag a Windows element by pointing to it, holding down the mouse button, and sliding the mouse from one spot on the surface of your desk to another and releasing the mouse button.

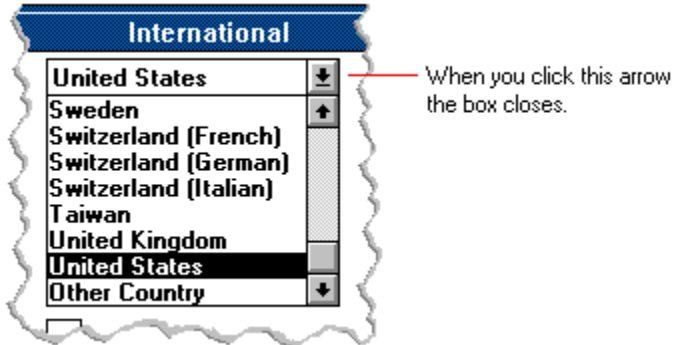
### drop-down list box

A list box that opens and closes in dialog boxes.

Before you open a drop-down list box, it looks like this:



After the list box is open, it looks like this:



**NOTE:** When the list is longer than the box, scroll bars are provided.

**error checking**

A method for validating transmissions.

**expand**

To show hidden directory levels in the Directory Tree. With File Manager, you can expand a single directory level, one branch of the Directory Tree, or all branches at once.

**expanded memory**

Memory in addition to conventional memory that is available to applications. It is allocated in 16K blocks. Windows makes use of expanded memory only if the /r switch is used at startup. Windows running in 386 enhanced mode simulates expanded memory for the applications that need it. Windows running in standard mode or 386 enhanced mode allows applications to use expanded memory, but does not use expanded memory itself in managing applications.

**extended memory**

Memory in addition to conventional memory that is not readily accessible to MS-DOS or MS-DOS applications. Extended memory cannot be used on 8086 and 8088 computers. Windows running in standard mode or 386 enhanced mode uses extended memory to manage and run applications.

**extended synthesizer**

One of the two types of synthesizers accommodated by Windows.

MIDI files authored for Windows include two versions of a song: one version for base-level synthesizers and another version for extended synthesizers. The distinctions between base-level and extended synthesizers are based on the number of instruments and notes the synthesizer can play.

**extension**


Part of a file or directory name that appears after a period and provides additional information. It usually indicates the type of file or directory. For example, program files have default extensions of .COM or .EXE .

Many applications include a default extension automatically when you save a file the first time. For example, Notepad adds a .TXT extension to all filenames unless you specify otherwise.








**file**

A document or application that has been given a name. All documents are stored as files in Windows.

**file information line** Write - REPORT.TXT 12% of 101K 12:08 AM 2-6-91

Information specific to each file in a print queue. The information can include these details:

-  The file's position in the queue or a printer icon if the file is printing.
-  The title of the print job assigned by the application (if your network software supports this).
-  What percentage of the file has printed so far.
-  The size of the file in kilobytes (if the Print File Size command on the View menu is selected).
-  The time and date you sent the file to Print Manager (if the Time/Date Sent command on the View menu is selected).

If you are connected to a network printer, the printer queue information line shows the network server connection. Any detailed information the network can provide appears in the message box at the upper-right corner of the Print Manager window. Networks can provide varying degrees of detailed information.

**flow control**

The method for controlling the flow of information.

**font** Water **Water** *Water* Water Water

A graphic design applied to all numerals, symbols, and characters in the alphabet. A font usually comes in different sizes and provides different styles, such as bold, italic, and underlining for emphasizing text.

**font size**

The height of a printed character, measured in points. One inch equals 72 points. For example, 12-point Helv is 12 points high.

**Helv**

---

Helv 8 ABCDEFGHIJKL

Helv 10 ABCDEFGHIJKL

Helv 12 ABCDEFGHIJKL

**Helv 14 ABCDEFGHIJKL**

The font and font size you use determine the amount of text that fits on one page.

**format**

(1) The appearance of text on the pages of a document. (2) To prepare a disk so it can hold information. Formatting a disk erases all information that was previously on it.

**full-screen application**

A non-Windows application that uses the entire screen--rather than a window--to run in the Windows environment.

**General MIDI Mode standard**

A MIDI specification controlled by the MIDI Manufacturers Association (MMA). The purpose of this specification is to enable MIDI file authors to create files that sound the same across a variety of different synthesizers.



**group**

A collection of applications within Program Manager. Grouping your applications makes them easier to find.

**group icon** 

A group window you have reduced to an icon in Program Manager.

**group window**

A window that displays the items in a group within Program Manager. These items can be applications, files associated with applications, or a combination of both.

**History button**

Displays a list of the HyperGuide topics you have viewed. Use this button to revisit any of the last 40 HyperGuide topics you have viewed. The most recent topic appears first.

**hotspot**

Text, graphics, or parts of graphics that provide links to other HyperGuide topics or more information about the current topic.

Whether text or graphics, the pointer changes to the shape of a hand whenever it is over a hotspot. If you click a hotspot that is linked to another topic, that topic will appear in the HyperGuide window. If the hotspot is linked to more information, HyperGuide displays the information in a popup window on top of the HyperGuide window.

**hue**

The position of a color along the color spectrum.

## HyperGuide button bar



Contains the HyperGuide buttons you use to move among topics and contents screens. It is located near the top of the HyperGuide window.

**icon**

A graphic representation of a disk drive, directory, group, application, document, and so on. You can restore an application icon to a window when you want to use the application.



**insertion point** |

The place where text will be inserted when you type. The insertion point usually appears as a flashing vertical bar in an application's window or in a dialog box. The text you type appears to the left of the insertion point, which moves to the right as you type.

**International MIDI Association (IMA)**

The non-profit MIDI organization that circulates information about the MIDI specification.

**keymaps**

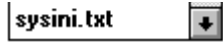
Percussion instruments are key-based--each note plays a different percussion instrument. Keymaps translate MIDI key values to ensure the proper percussion instruments are used to play MIDI files. All MIDI files for Windows are authored using standard key assignments based on the General MIDI Mode standard.

**keyword**

Words in the HyperGuide Search dialog box that are associated with topics. Each application's documentation has its own keyword list, including the glossary words in HyperGuide. You select from the list of keywords or type a keyword to see the list of topics associated with that keyword.

**kilobyte**

The measurement used for the size of a computer's memory, where 1 kilobyte (K) = 1,024 bytes.

**list box**

A box within a dialog box that lists available choices--for example, the list of all available files in a directory. If all the choices don't fit in the box, there will be a vertical scroll bar to the right of the list box. In some list boxes, you can select more than one item.

**local printer**

A printer that is directly connected to your printer by a cable.

|| 2 Calendar - SCHEDULE.CAL 6K 12:10AM 2-6-91 ||

## local queue

Lists the files that you directed to any active printer connected to your computer. The computer and printers are connected locally by a cable.

When Print Manager starts printing on a local printer, its icon appears at the bottom of your screen. If you restore the icon to a window, you see the print queue for any active printer connected to your computer. You can use the Print Manager window to check the status of files in the print queue or to interrupt or cancel a print job.



**luminosity**

The brightness of the color on a scale from black to white.

**maximize**

To enlarge a window to its maximum size by using the Maximize button or the Maximize command.

**Maximize button**

The small button at the upper-right corner of a window that contains an Up arrow. Mouse users can click the Maximize button to enlarge a window to its maximum size. Keyboard users can use the Maximize command on the Control menu.

**Media Control Interface (MCI)**

A standard control interface for multimedia devices and files. MCI allows a multimedia application to easily control a variety of multimedia devices and files.

**memory**

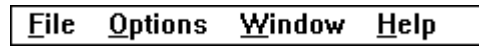
The space in a computer where information is stored while you are working with it. Most PCs have a small amount of read-only memory (ROM), containing the built-in programs that start the operation of the computer when it is turned on, and a large amount of random-access memory (RAM) for users' programs and data.

menu

✓ **Minimize on Use**

A list of available commands in an application window. Menu names appear in the menu bar near the top of the window. The Control menu, represented by the Control-menu box at the left end of the title bar, is common to all Windows applications. You use a command on a menu by selecting the menu name, then choosing the command you want.

**menu bar**



The horizontal bar containing the names of an application's menus. It appears just under the title bar.

**menu command**



A word or phrase in a menu that you choose to carry out an action, such as copying a file.



**menu name**

The name for a particular menu that appears in the menu bar and opens a menu when you choose it.

**menu title**

A word or phrase in the menu bar that identifies a group of commands. Selecting the menu title causes the title to be highlighted and its menu of commands to appear below it.

**MIDI**

Musical Instrument Digital Interface. MIDI sets a communications standard for transferring data between musical instruments and associated devices.

**MIDI file**

A file format for storing MIDI songs. In Windows, MIDI files have a .MID filename extension.

**MIDI Mapper**

A Control Panel option that lets you create and edit MIDI setup maps. Windows uses these maps to translate and redirect MIDI data.

**MIDI Sequencer**

Software that creates or plays songs stored as MIDI files. When a sequencer plays MIDI files, it sends MIDI data from the file to a MIDI synthesizer that produces the sounds. Windows provides a MIDI sequencer to play MIDI files.

**MIDI Manufacturer's Association (MMA)**

A collective organization composed of MIDI instrument manufacturers and MIDI software companies. The MMA works with the MIDI Standards Committee to maintain the MIDI specification.

**minimize**

To reduce a window to an icon using the Minimize button or the Minimize command. The document or application remains open (or running), and can be the active application or document.



**Minimize button**

The small button at the upper-right corner of a window that contains a Down arrow. Mouse users can click the Minimize button to reduce a window to an icon. Keyboard users can use the Minimize command on the Control menu.

**movie file**

A multimedia data file (for example, a file with the .MMM extension). You can play movie files with the Media Player accessory. Movie files are also called animations.

**MSCDEX**








Microsoft Compact Disc Extensions. MSCDEX is software that makes CD-ROM drives appear to DOS as network drives. You must have MSCDEX installed on your computer for the CD-ROM drive to work.

**multimedia extensions**

Additional features added to Windows version 3.0 that enable your computer to run animations, play sound and MIDI files, and display high-quality images.

## **Multimedia PC**

Multimedia personal computer. A multimedia computer satisfies a minimum set of hardware/software requirements necessary for multimedia computing. The requirements include:

-  An 80286/386/486 microprocessor running at 10MHz or faster
-  2MB or more of RAM
-  30MB or larger hard disk
-  VGA display
-  A digital audio subsystem
-  A CD-ROM drive
-  Systems software compatible with Microsoft Windows version 3.0 with multimedia extensions

**multitasking**

The ability of a single computer to perform several tasks simultaneously.

Multitasking makes it possible to print one document while editing another, or to perform lengthy computations while you work on something else.

**network printer**

A printer that is accessible to your computer only through a network.

**network queue**

Lists the files on the network server if you are using a network printer.



**network server**

A computer on a network that provides a particular service to other computers. For example, a disk server manages a large file server, and a print server manages a printer.

**non-Windows application**

An application that was not designed to run in Windows. Generally, non-Windows applications do not conform to Windows user-interface standards.

**open**

To display the contents of a directory or file in a window, or to enlarge an icon to a window.

**option button**



A small round button that appears in a dialog box and is used to select an option. Within a group of related option buttons, you can select only one button.

**palette**

Defines the colors used in a bitmap image. Every device independent bitmap (DIB) has an associated color palette.

**parity**

The method of detecting errors in data transmission.

**patch**

A specific sound created by a synthesizer. A synthesizer plays notes using sounds defined as patches.

**patchmaps**

A patch is a specific sound created by a synthesizer. A synthesizer plays notes using sounds defined as patches. Patchmaps translate MIDI patch changes to ensure the proper instruments are used to play MIDI files. All MIDI files for Windows are authored using standard patch assignments based on the General MIDI Mode standard.



**pathname**

The directions to a directory or file within your system. For example, C:\WINDOWS3\APPTS\JUNE.CAL is the pathname of the JUNE.CAL file in the APPTS subdirectory in the WINDOWS3 directory on drive C.

**picture elements**

The smallest graphics unit on the screen. Also known as pels.

**pixels**

The smallest graphic units on the screen. Also known as picture elements (pels).

**playlist**

A list of compact disc titles and tracks that determines the order in which the tracks on the disc are played. Playlists are only used in Music Box.

Use the Program button to assign or edit titles, and to change the playlist.

## pointer



In Windows, the shape of the pointer indicates its function.



For selecting Windows items, scrolling, resizing windows, and moving windows and dialog boxes with your mouse. This is the pointer you will see most often.



For choosing a HyperGuide hotspot.



For selecting text with your mouse.



For changing the size of a window with your mouse.



For changing the location or size of a window with your keyboard.



For indicating the application is processing your request.

## port

A connection on a computer where you plug in a cable that carries data to a device.

LPT ports are parallel ports. COM ports are serial ports. EPT is a port used for certain printers, such as the IBM Personal Pageprinter. You can use the EPT port only if you have installed a special card in your computer.

Multimedia PCs also have a port for a MIDI sequencer.

**print options**

Printer-specific settings such as page orientation--portrait or landscape--or the manner in which paper feeds through the printer. These options vary from printer to printer.

**printer-driver file**

A file that gives Windows important information about how to control your printer, including details about printer features and the printing interface, descriptions of fonts (such as sizes and styles), character translations, and control sequences the printer uses to achieve various formats. Windows has printer-driver files for most commonly used printers.

**printer font**




A series of dots connected by lines that can be scaled to different sizes. Another name for printer fonts is vector (or stroke) fonts. Plotters typically use vector fonts.



**printer queue information line**

PCL/HP LaserJet on LPT1 [Printing]

Indicates the following:

-  The name of the printer.
-  Where the printer connects to your computer.
-  The current status of the printer.

**program file** 

A file that contains information that controls an application. In File Manager, each program file is represented by an icon. You can start the application by choosing the icon. Filenames for program files can have these extensions: .EXE, .COM, .PIF, and .BAT.

**program information file (PIF)**

A file that provides important information that Windows needs to run a non-Windows application. PIFs contain information such as the name of the file, a startup directory, whether the program writes directly to the screen or to memory, and multitasking options for applications running in 386 enhanced mode.

**program item** 

A program file or associated document represented by an icon in Program Manager. The program item provides the instructions Windows needs to start an application and open a document (if specified) when you choose the icon.

**program item icon**

An icon representing an application you can start or an associated document you can open from a group in Program Manager. The program item provides the instructions Windows needs to start an application and open a document (if specified) when you choose the icon.

**RGB components**

The amount of each of the three primary colors--red, green, and blue--present in a color. Every color and pattern is made by varying the three primary colors. This is true even in monochrome (black and white) mode. For instance, white is made by mixing together 255 parts of red, 255 parts of green, and 255 parts of blue. Black, on the other hand, is 0 red, 0 green, and 0 blue.

**read-only**

Describes a file or CD-ROM disc that can only be opened and read. You cannot edit a read-only file or CD-ROM disc and save your changes.

**real mode**

An operating mode that Windows runs in to provide maximum compatibility with versions of Windows applications released prior to Windows version 3.0. Real mode is the only mode available for computers with less than 1 MB of extended memory.



**Restore button**

The small button at the upper-right corner of a window that contains both an Up arrow and a Down arrow. The Restore button appears only after you have enlarged a window to its maximum size. Mouse users can click the Restore button to return the window to its previous size. Keyboard users can use the Restore command on the Control menu.

**root directory**

The main directory on a disk. The root directory is created at the first level when you format a disk. The symbol used to indicate the root directory of a disk is the backslash (\). For example, the root directory for drive C is noted as C:\.

**sample**

A piece of waveform data represented by a single numerical value. You convert sound into digital form by taking samples of the sound at specific time intervals and converting them to numeric values.

**saturation**

The purity of a hue, moving from gray to the pure color.

**scaled font size**

A font size that approximates a specified font size for use on the screen. Windows scales larger font sizes when a size that is available for the printer is not available for the screen. Scaled fonts may look slightly different from unscaled fonts. When you choose a smaller font size that is available for the printer but not for the screen, Windows substitutes the correct size from a precision-drawn font that resembles the selected font as closely as possible.

## screen font

A font that duplicates a printer font on your screen.



If you choose a printer font that does not have a corresponding screen font, Windows substitutes a screen font that closely resembles the printer font. The substitute font duplicates the line lengths and page breaks of the font you selected.

When you purchase extra fonts from a printer or font manufacturer, ask about the availability of screen fonts to match.

**screen saver**

An image or pattern that is shown on your computer screen during periods of inactivity. Screen savers hide information currently on the screen; by changing patterns they can also save wear on the electronics in the display.

**scroll arrow**

An arrow on either end of a scroll bar that is used to scroll through the contents of a window or list box. Clicking a scroll arrow moves the contents one line. Holding down a scroll arrow scrolls the contents continuously.

Scroll arrows also control the playing of media in some applications, such as Media Player and Sound Recorder.



**scroll bar**

A bar that appears at the right and/or bottom edge of a window whose contents aren't completely visible. Each scroll bar contains two scroll arrows and a scroll box, which allow you to scroll within the window or list box.

A scroll bar is also used to control playing of media in some applications, such as Media Player and Sound Recorder.

**scroll box**

The square or rectangular box within a scroll bar that indicates your relative position within a document or list box. Mouse users can drag the scroll box up or down quickly through long documents.

A scroll box is also used to control playing of media in some applications, such as Media Player and Sound Recorder.

**Search button**

Displays the keywords you can use to search for topics. Use this button to look for topics related to a keyword.

**select**

To mark an item by highlighting it with key combinations or with a mouse. Selecting does not initiate an action. After selecting an item, you choose the action that affects or involves the item. For example, you can select text and then choose the Copy command to copy the text onto the Clipboard.

**selection cursor**



The marking device that shows where you are in a window, menu, or dialog box and what you have selected. The selection cursor appears as a dotted box around the text in a dialog box option.

**serial ports**

Ports used by your system, named COM1, COM2, and so on. Serial ports are typically used for connecting modems, mouse devices, and some kinds of printers.

**shortcut key**

A key or key combination, available for some commands, that you can press to carry out a command without first selecting a menu. The shortcut key for a command is listed to the right of the command name on the menu.

**shrink**

To reduce a window to an icon using the Minimize button or the Minimize command. The document or application remains open (or running), and can be the active application or document.



**simple device**

Devices, such as audio compact-disc players, that don't have an associated file and can be opened without a filename specification.

**solid color**

A color directly supported by your display.

**source directory**

The directory containing the file or files you intend to copy or move.

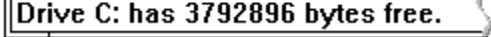
**spin box**



A spin box shows one item in a range of possible choices. Clicking the Up or Down arrow to the right of the entry lets you "spin" through the available choices until your choice appears in the display rectangle.

**standard mode**

The normal operating mode for running Windows. This mode provides access to extended memory. In standard mode, you can also switch among non-Windows applications.

**status bar**A screenshot of a status bar from a file explorer window. The text "Drive C: has 3792896 bytes free." is displayed in a bold, black font. The text is enclosed in a thin black rectangular border that has a slight 3D effect, with a shadow on the right side. The background of the status bar is white.

A line of information located at the top or bottom of a window. For example, in a directory window the status bar tells how many files are selected, how much disk space they occupy, and the total number of files in the directory. In the Directory Tree window, the status bar shows the number of bytes available on the disk and the total disk capacity. Not all windows have a status bar.

**stop bits**

The timing unit between characters.

Stop bits are not actually bits; they determine the time between transmitted characters.

**synthesizer**

An electronic instrument able to make music and sounds by creating its own audio waveforms and sending them out to an audio system. A synthesizer can play back MIDI files.



**Task List**

A window that shows all the applications you have running so you can switch among them. You can open the Task List window by choosing Switch To from the Control Menu or by pressing CTRL+ESC.

**text box**    **Filename:**

A box within a dialog box where you type the information needed to carry out a command. When the dialog box appears, the text box may be blank or may contain text.

**text file**

A file containing only plain text, numbers or symbols. The text in a text file is uniform and does not contain any formatting, such as bold, underline, or different fonts and font sizes. A text file usually consists of characters coded from the ASCII character set.

The advantage of a text file is that it can be transferred to almost any text editor or word processor. Also, MS-DOS and Windows use text files, such as AUTOEXEC.BAT, CONFIG.SYS, and WIN.INI.

**title**

Another name for a software application written to run on a Multimedia PC.

**title bar**

The horizontal bar at the top of a window that contains the title of the window or dialog box. On many windows, the title bar also contains the Control-menu box and Maximize and Minimize buttons.

**topic**

The level in the HyperGuide hierarchy at which you see information in the main window. This information can be in the form of a Quick Look graphic, an explanation of a command, a conceptual overview, a procedure, or a table of keys. Information in pop-up windows and contents screens are not considered topics.

**track**

A sequence of sound on a CD disc, which usually corresponds to a song.

**Up button**



Moves up one level in the HyperGuide hierarchy.



**vector fonts**

A series of dots connected by lines that can be scaled to different sizes.

**virtual memory**

A memory management system used by Windows running in 386 enhanced mode, which allows Windows to behave as if there were more memory than is actually present in the system. Virtual memory equals the amount of free RAM plus the amount of disk space allocated to a swap file that Windows uses to simulate additional RAM.

**volume label**

The name you give a disk by using the Label command. Disk labels are optional. You see this information in File Manager only if you assigned a label to your disk. You can change or add a disk label through File Manager.

**WAVE format**

Microsoft's format for digitized waveform files. These files have a .WAV extension.

**waveform**

A sound waveform displays variances in air pressure over time. An audio signal waveform displays variances in voltage over time.

**wildcard characters**

Two MS-DOS characters you can substitute for all or part of a file or directory name when you want to find similarly-named files or want one command to affect a number of files or directories.

An asterisk (\*) substitutes for all characters. A question mark (?) substitutes for a single character.

For example, this entry covers all files with a .DOC extension in the current directory:

**\*.DOC**

And this entry covers everything named with FY, three other characters, and the extension .90:

**FY???.90**

**window**

A rectangular area on your screen in which you view an application or document. You can open, close, and move windows, and change the size of most windows. You can open several windows on the desktop at the same time and you can shrink windows to icons or enlarge them to fill the entire desktop.

**window border**

The outside edge of a window. You can lengthen or shorten each border. You can also change the width of the border with Control Panel's Desktop command.



**Windows application**

An application that was designed for Windows and will not run without Windows. All Windows applications follow the same conventions for arrangement of menus, style of dialog boxes, use of the keyboard and mouse, and so on.

**wrap**

The automatic movement of the insertion point from the end of one line to the beginning of the next line as you type. When text wraps, you do not need to press ENTER at the end of each line in a paragraph.



