Meet the Microsoft Mastering Series

Mastering Microsoft Visual Basic 5 is one in a series of CD-ROM-based training programs. Other Mastering Series titles currently available are:

® *Mastering Microsoft Visual FoxPro*

® *Mastering Microsoft Visual Basic 4.0*

® *Mastering Microsoft Visual C++ 4*

® *Mastering Microsoft Access Programming*

® *Mastering Microsoft Exchange Development*

® *Mastering Internet Development with Microsoft ActiveX Technologies*

® *Mastering Microsoft Office 97 Development*

The Microsoft Mastering Series titles are content-rich, self-paced, interactive CD-ROM-based learning tools designed to help you quickly master Microsoft development tools. The courses combine high-level technical content with an intuitive learning methodology, so you can learn in the way that best suits your schedule and study habits.

All Mastering titles include interactive lessons, narrated demonstrations, hands-on labs, sample code, and a library of reference material to supplement courses and exercises. You can navigate directly to the Course material or library resources that you want by using a flexible browsing and searching system.

Most of the Mastering Series courses are Microsoft Official Curriculum, and can be used to gain the necessary skills for Microsoft Certification. Microsoft Mastering Series products are not introductory courses on programming. It is assumed that you have experience using Microsoft development tools to create solutions for Microsoft Windows.

Related Topics

Take the Tour

The best way to familiarize yourself with *Mastering Microsoft Visual Basic 5* is to take a short multimedia tour of the title. The Tour is accessible from the **Help** menu and the Welcome screen.

System Requirements

To run *Mastering Microsoft Visual Basic 5,* you need:

® A personal computer with a 486DX or higher processor running Microsoft Windows 95 or Microsoft Windows NT Workstation 3.51 Service Pack 5 or later (will not run on earlier versions)

® 8 megabytes (MB) of memory (16 MB recommended) for Windows 95; 12 MB of RAM (20 MB recommended) for Windows NT Workstation

® 10 MB available hard disk space

® MPC2-compatible CD-ROM drive

® Super VGA or higher resolution video adapter capable of displaying 256 colors or more

® Microsoft Mouse or compatible pointing device

® MPC2-compatible audio board required for audio and video instruction

® For connection to the World Wide Web through URL links provided in the title, Microsoft Internet Explorer version 3.0 or later, a modem, and an account with an Internet service provider or online service.

® For lab exercises covering Automation, Microsoft Office 97 is recommended.

Using the Navigation Pane

The Navigation pane occupies the left pane of the Viewer window, and is used to navigate through the content of the title. On the Contents menu at the top of the navigation area, you can choose a component of the Course or a section of the Library to be displayed in the Topic pane at the left of the Viewer window.

Use the Contents buttons to view the Contents menu or to find information, as follows.

Contents. Displays the Course components or Library sections.

Index. Displays index entries related to particular topics in the Course and Library.

Find. Displays the Find pane, where you can search for a word or topic.

The Navigation pane is separated from the Topic pane by a split bar that you can drag to change the size of both panes.

Related Topics

The Course components are:

® **Course**. Displays the chapters for the Course, and includes the following components.

® **Labs**. Include exercises that provide experience using the skills presented in the chapters.

® **Multimedia**. Includes audio and video demonstrations and animationsof the concepts and techniques covered in the Course.

® **Sample Code**. Provides code samples to illustrate the material covered in the chapters and labs.

® **Self Checks**. Test your understanding of the material covered in each chapter by answering the Self Check questions.

Viewing Content in the Topic Pane

When you select a topic in the navigation area, the text and associated media displays in the Topic pane. You can view the following elements in the Topic pane.

® Course or Library selections

® A topic selected from the Notebook

® A topic selected from the History window

® Index entries

® Search results from using the Find feature

You can use the navigation buttons at the bottom of the Topic pane to move forward and back through the Course contents, or to jump to information that is related to the currently displayed topic.

You can select text displayed in the Topic pane to copy to the Clipboard. You can also print the topic.

To change the size of both panes, drag the split bar between the panes.

Related Topics

Displaying Multimedia and Additional Information

Throughout *Mastering Microsoft Visual Basic 5*, you will find multimedia icons that you can click to:

® View additional information, such as narrated demonstrations and animations, graphics, sample code, and tips.

® Execute programs, including Setup for various Microsoft tools.

® Launch online Help files.

® Launch Internet Explorer and jump to a specific address.

Here are icons that you will see throughout the Course. To view a description of each icon, click the icon.

Animations. An animated introduction describes what you can expect to learn in the chapter. Additional animations in the Course illustrate technical concepts.

Demonstrations. Help you learn by watching and listening, as a developer takes you through the steps of a procedure.

Executables. Execute programs.

Help. Launches online Help files.

Illustrations. Display technical illustrations and diagrams.

Internet. Launches Internet Explorer and jumps to a specific Internet address.

Sample Code. Displays a pop-up window of sample code.

Self Checks. Provide several questions and one answer at the end of each chapter.

Tips. Provide helpful information.

Related Topics

Choosing a Display Mode

You can view the Contents, Index, or Find features by clicking one of the buttons at the top of the Navigation pane on the left, while displaying the associated information in the Topic pane on the right. Or, you can hide the Navigation pane and view only the Topic pane.

u **To display both panes of the window, do one of the following**

® On the View menu, click Navigation & Topic.

® Press CTRL+A.

® Point to the left pane, right-click, and then click Navigation & Topic on the shortcut menu.

® Click the **Navigation & Topic** button on the toolbar.

u **To display the Topic pane only, do one of the following**

® On the **View** menu, click **Topic Only**.

® Press CTRL+O.

® Point to the left pane, right-click, and click **Topic Only** on the shortcut menu.

® Click the **Topic Only** button on the toolbar.

    Related Topics

Introducing the Course

In this Course, you will learn to build sophisticated solutions using ActiveX controls, create database solutions and enable your Visual Basic applications to take advantage of the Internet.

The Course includes an assortment of labs that give you hands-on experience using the skills learned in the chapters. Each lab consists of one or more exercises that focus on the information contained in the associated chapter. At any time, you can review solutions to the lab. The Course also includes narrated demonstrations and animations, sample code, and tips. You can test your understanding of the material by answering the self check questions.

The Library contains extensive technical references and resources, including articles and whitepapers, Knowledge Base articles, books, pointers to relevant World Wide Web sites, and useful tools that you can install from the CD-ROM.

Taking the Tour is the best way to learn about the contents of the Course and how to navigate. The Tour is accessible from the Welcome screen and from the **Help** menu.

Related Topics

An Overview of Course Content

Click a button below for a description of each chapter in the Course:

Ch 1   Visual Basic Review
Ch 2   Using the Data Control
Ch 3   Using Data Access Objects
Ch 4   Advanced Database Development
Ch 5   Using Dynamic-Link Libraries
Ch 6   Creating ActiveX Clients
Ch 7   Creating ActiveX Code Components
Ch 8   Creating ActiveX Controls
Ch 9   Using ActiveX Components in Internet Explorer
Ch 10   Creating and Using ActiveX Documents
Ch 11   Creating Internet-Aware Applications
Ch 12   Application Setup and Optimization

You can take the Course in any order that you choose－start at the beginning, jump into the middle, or read only those topics that interest you.

Related Topics

Chapter 1 covers user interface design, writing and debugging code, and creating an executable file.

Chapter 2 discusses how to use the data control to work with data in a Microsoft Access database. You will also learn about data control events, and how to use the data-bound grid and data-bound combo box to view and update data.

Chapter 3 introduces data access objects and how to use them to open a database and to work with recordsets. You will learn to write applications that access data using DAO and that use stored queries.

Chapter 4 teaches you how to create an application that accesses external data and that can handle multi-user locking issues, referential integrity, rule-violation errors, and ODBCDirect.

Chapter 5 identifies the benefits of using DLLs and gives general information on using them. You will learn to declare and invoke a routine in a DLL and to create an application that uses various functions from the Win32 API.

Chapter 6 introduces Automation as a way to integrate applications. You will learn to use Visual Basic to program Microsoft Excel and Word. You will also learn how to embed and link a Microsoft Excel or Word object into a Visual Basic form.

Chapter 7 introduces you to creating ActiveX code components, formerly known as OLE servers. You learn how to create servers that provide objects using Visual Basic as well as how to implement an interface and extend code component functionality.

Chapter 8 thoroughly covers creating ActiveX components that expose objects, properties, and methods.

Chapter 9 covers the basics of using an ActiveX control on a Web page, including: adding a control to an HTML page, downloading the control and related files, and a very simple VBScript to interact with the control.

Chapter 10 covers creating ActiveX documents and using them in Internet Explorer and Office Binder.

Chapter 11 covers using the new Internet control to build Internet-aware Visual Basic applications.

Chapter 12 teaches you how to create a setup program, invoke help topics from a Help file, and use resource files in creating an application.

Course Components

Mastering Microsoft Visual Basic 5 consists of components that can be accessed from within the Course or Library content, or directly from the menu at the top of the Navigation pane. The Course components include:

® [Course](#)

® [Labs](#)

® [Multimedia](#)

® [Sample Code](#)

® [Self Checks](#)

Within the Course chapters, you'll also find:

® [Executables](#)

® [Help Files](#)

® [Graphics](#)

® [Internet Jumps](#)

® [Tips](#)

Related Topics

Multimedia demonstrations and animations illustrate and help you master programming concepts and techniques. You can jump to a list of demonstrations and animations by clicking Multimedia on the Contents menu. To launch a demonstration or animation, click the one you want in the Navigation pane.

 To launch a **demonstration** from within the Course, click a demonstration icon.

 To launch an **animation** from within the Course, click an animation icon.

Note   You can view the associated text of a demonstration or animation by clicking **Select Closed Caption** on the **View** menu (or press CTRL+S).

Each pop-up window has a slider control that enables you to play, pause, or jump to another location in the media file.

Executable files can be launched from within *Mastering Microsoft Visual Basic 5*.

To launch an executable file, click an executable icon.

Follow the installation instructions specific to the Setup program you have executed.

Help files can be launched from within *Mastering Microsoft Visual Basic 5*.

To launch a Help file, click the Help icon.

Note   The *Mastering Microsoft Visual Basic 5* Help file can be launched from the toolbar or from the **Help** menu.

Illustrations are provided to show important information described in the Course. You'll see three types of illustrations:

® Standard in-line graphics.

® In-line graphics with hot spots you can click to view additional information.

® Pop-up graphics. Click the Illustration icon within the Course to view an illustration. The illustrations can be displayed in two sizes. To expand or reduce the window size, click the illustration.

You can print or copy an illustration to the Clipboard by using the toolbar or menu commands.

Launch **Internet Explorer** to jump to a specific site on the Internet.

To launch Internet Explorer and jump to a specified Web page, click the Internet Jump icon, and then click OK in the dialog box.

Note   The first time you launch Internet Explorer from *Mastering Microsoft Visual Basic 5*, a dialog box is displayed to inform you that you are about to launch Internet Explorer. If you do not want this prompt to appear each time you launch Internet Explorer, you can turn off the message by clicking **View this dialog when launching Internet Explorer 3.0** in the dialog box.

You can browse the Web site you jumped to, or surf the Internet by entering other Internet addresses. To return to *Mastering Microsoft Visual Basic 5*, minimize or close Internet Explorer.

Labs in each chapter illustrate programming concepts and techniques. You can jump to the lab exercises by clicking **Labs** on the Contents menu, or by clicking the lab you want within the Course. In the Course, labs and their solutions appear at the end of the chapter section with which they are associated.

Each lab has associated project, solution, and demonstration files. You can review the complete solution for each lab within the Course, or by clicking **Multimedia** on the Contents menu.

A list of **Sample Code** is available by clicking **Sample Code** on the Contents menu. To display sample code in the Topic pane, click the chapter or lab, and then click the code you want from the list in the Topic pane.

Or, you can view sample code by clicking a Sample Code icon within the chapters or labs in the Course.

The Sample Code window opens to the same size and location as when it was last closed. You can resize the window by dragging its borders.

You can copy sample code to the Clipboard. Or, you can print the sample code displayed in the window. To copy or print sample code, right-click in the Sample Code window, and then click **Print** or **Copy**.

Test your understanding of the Course material by answering the **Self-Check** questions. You can view a list of the Self-Check questions by clicking **Self Checks** on the Contents menu, or by clicking **Self Check** at the end of each chapter. The Self Checks provide several questions with one correct answer for each.

 To view an answer to a self-check question, click the answer icon.

The answer window opens to the same size and location as when it was last closed. You can resize the window by dragging its borders.

You can copy or print an answer to the Clipboard. To print or copy an answer, right-click the Topic pane when a self check is displayed, and then click **Print** or **Copy**.

Note   You can also print the questions displayed in the Topic pane by clicking the **Print** button on the toolbar.

Tips are provided throughout the chapters.

To view a tip, click a tip icon within the Course.

The Tip window opens to the same size and location as when it was last closed. You can resize the window by dragging its borders.

You can select a portion of a tip to copy it to the Clipboard, or you can print or copy the entire tip. To print or copy a tip, right-click the Tip window, and then click **Print** or **Copy**.

Put the Index to Work

You can use the Navigation pane to search the Index containing information from the Course and Library.

u **To search the Index, do one of the following**

® On the **View** menu, click **Index**.

® Press CTRL+I.

® Point to the Navigation pane, right-click, and then click **Index** on the shortcut menu.

® Click the Index button at the top of the Navigation pane.

u **To use the Index**

1. Click the text box, and type the first few letters of the word that you want to find.

   The Index will scroll to the closest entry and list related topics in a list box at the bottom of the Navigation pane.

2. Click an Index entry to display the associated topic in the Topic pane.

Related Topics

Using Find to Refine Your Search

 u **To use Find to search for a word or phrase, do one of the following**

® On the **View** menu, click **Find**.

® Press CTRL+F.

® Point to the Navigation pane, right-click, and then click **Find** on the shortcut menu.

® Click **Find** on the toolbar.

You can type a word or phrase, or select a previous search string from the drop-down list. To search for a phrase, enclose the phrase in quotation marks. You can also use Boolean operators to refine your search.

Related Topics

Using Boolean Operators

Mastering Microsoft Visual Basic 5 supports the following Boolean operators in the Find tool.

Operator	Description	Example
*	Matches any number of characters in a word.	**valid*** finds valid, validate, validation.
AND **+ (plus)** **& (ampersand)**	The logical AND (**+**) and the ampersand operators find topics that only contain all of the strings.	**language AND logic** finds topics that only contain both words.
OR **| (pipe)** **, (comma)**	The logical OR (**|**) and comma operators find topics that contain any of the listed strings.	**language OR logic** finds topics that contain either word.
NOT **- (minus)** **~ (tilde)**	The logical NOT (**-**) and tilde operator find only topics that do not contain the string.	**language NOT logic** finds topics that contain the word **language**, and do not contain the word **logic**.
NEAR	The NEAR operator finds only those topics within eight words.	**save NEAR print** finds those topics that only contain the two words within eight words from each other.

You can combine multiple operators in a single search. The search string is evaluated from left to right. You can also enclose a phrase in quotation marks to search for that exact phrase, rather than the individual words within it. You can force the search string to be evaluated in a different order by enclosing portions of it in parentheses.

To run the search, press ENTER. When the results list appears, click a topic to view it in the Topic pane. The word or phrase for which you searched is highlighted in the displayed topic.

Viewing the Glossary

u **To see glossary terms and definitions, do one of the following**

® To display an associated glossary definition, click any word or phrase in the Course that is underlined, in magenta text.

® Click the **Glossary** button on the toolbar to open the Help file and search for a word or phrase.

Related Topics

Revisiting Topics Using the History Window

To browse through a list of previously visited topics, open the History window by clicking **History** on the **Navigate** menu, or by pressing CTRL+H.

Click a topic in the History window to display it in the Topic pane. If the Contents are displayed in the Navigation pane, the title of the topic in the History window will be selected.

Note   You must use the mouse to select a topic in the History window. The keyboard is disabled in this window.

The History window stays on top of the Viewer window until you close it. The window opens in the same size and location as when it was last closed. You can move the window or drag its borders to suit your needs.

How to Use the Library

To display the Library, click the **Contents** button, and then click the Library option you want to view. The text of the Library item will appear in the Topic pane.

Related Topics

What You Can Find in the Library

The Library contains a broad variety of reference material, such as:

[Articles and Whitepapers](#)

[Knowledge Base](#)

[Sample Applications](#)

[Books](#)

[Resources](#)

When viewing the Course topics in the Topic pane, you can jump quickly to related information in the Library by clicking the **Related Information** menu, or by clicking [Related Information](#) on the **Navigate** menu.

Note   The **Related Information** menu appears dimmed if there is no related information available in the Library for that topic.

   Related Topics

The **Articles and Whitepapers** section contains many technical articles and whitepapers related to the Course contents.

The **Knowledge Base** section provides a link to the Knowledge Base Web page on the Microsoft Web site, where you can search for articles about Visual Basic and related technologies.

The **Sample Applications** section of the Library contains sample applications that demonstrate specific features of Microsoft Visual Basic 5.0.

In the **Books** section, you'll find sample chapters from Visual Basic-related books, and a list of books published by Microsoft Press.

Exploring the Resources Section

In the **Resources** section of the Library, you'll find the following:

® **Microsoft Programs**. Learn more about the programs available from Microsoft, including the Microsoft Certified Professional Program, the Microsoft Solution Provider Program, and the Microsoft Logo programs.

® **Microsoft Technical Support**. Provides information about online, CD-ROM-based, fax-based, and phone-based support for Microsoft products. This section includes support phone numbers.

® **Microsoft Technical Training and Education**. Read about a variety of Microsoft Technical Education options, including face-to-face, online, and self-paced training.

® **Lists and References**. Provides a list of user groups and mailing lists of interest to a Visual Basic programmer.

® **Publishers**. Find out about book and magazine publishers of Visual Basic-related material.

® **World Wide Web**. Check out various Microsoft Web sites that provide information about developing custom solutions with Visual Basic applications, and other types of information useful to developers.

Related Topics

Creating Notebook Entries

You can use the **Notebook** to mark topics of interest anywhere in the Course and make notes about these topics. You can return to these notes at any time during the current session or during future sessions.

u **To open the Notebook, do one of the following**

® On the **Edit** menu, click **Notebook**.

® Press CTRL+K.

® Point to the Navigation or Topic pane, right-click, and then click **Notebook** on the shortcut menu.

® Click **Notebook** on the toolbar.

For more information about using the Notebook, click on an item below:

Add or delete a Notebook entry

Add, edit, or delete your notes

Display a Notebook entry in the Topic pane

View notes for current topic

View Help in the Notebook

Printing Notes and Notebook entries

u **To add a topic to the Notebook, click the topic in the Navigation pane, and then**

® Click the **Notebook** button on the toolbar to open the Notebook window.

® Click the **Add to Notebook** button on the Notebook toolbar.

u **To delete a Notebook entry, select it from the Notebook list, and then:**

® Click the **Delete** button on the Notebook toolbar.

u **To add new notes to the Notebook or edit existing notes**

® Add the topic to the Notebook, or select an existing Notebook entry, and then type your notes in the Topic pane.

® Click the **Add to Notebook** button to attach your notes to the existing Notebook entry.

u **To paste text or graphics from the Topic pane into the Notebook window, copy the information to the Clipboard, and then do one of the following**

® Press CTRL+V.

® Right-click the Notes pane in the Notebook window, and then click **Paste** on the shortcut menu.

® Click the **Paste** button on the toolbar.

Note   When you edit your notes, you can right-click to select the standard Windows editing commands, **Undo**, **Cut**, **Copy**, **Paste**, and **Select All**.

To display a topic from the Notebook window in the Topic pane, select the topic in the Notebook window, and then click the **Go To Topic** button, or double-click the topic.

To view the notes for the currently displayed topic, click the **Notebook** button on the toolbar.

You can view **What's This?** online Help for the toolbar buttons and windows in the Notebook. Point to the button or window for which you want help, right-click, and then click **What's This?**.

Printing Notes and Notebook Entries

You can print all of the topics listed in your Notebook, print only the current Notebook entry, print all your notes for the current entry, or print all your notes for all topics.
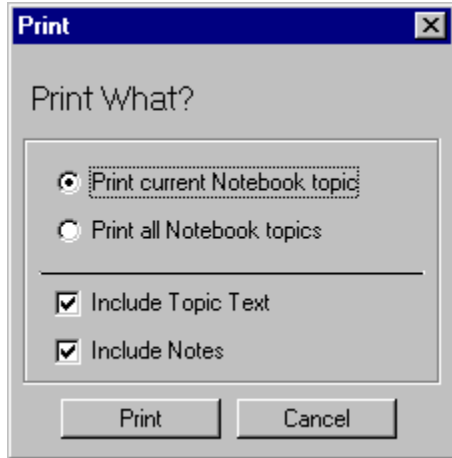
u To print in the Notebook window, click the **Print** button and then click one of the following options

® **Print current Notebook topic**. Prints the selected Notebook entry.

® **Print all Notebook topics**. Prints all topics stored in your Notebook.

You can choose one or both of the following to print the Notebook topic(s) with or without your notes.

® **Include Topic Text**. Prints the selected entry or all Notebook entries.

® **Include Notes**. Prints notes that are associated with the selected entry, or all notes that you have added to the Notebook.

To print the option you want, click the **Print** button, or click **Cancel** to close the dialog box without printing.

Related Topics

Printing Topics and Other Information

You can print the topic text displayed in the Topic pane.

u **To print, do one of the following**

® On the **File** menu, click **Print**.

® Press CTRL+P.

® Right-click in the Navigation pane, and then click **Print** on the shortcut menu.

® Click the **Print** button on the toolbar.

When you click **Print**, a Windows **Print** dialog box appears. Select the options you want, and then click OK.

Related Topics

"What's This?"--Help About Toolbars, Menus, and Windows

To find out what a screen element does, you can point to the element for which you want Help, right-click, and then click **What's This?**.

The Toolbar Buttons

Main ViewerToolbar

Print. Click to print the entire topic displayed in the Topic pane.

Copy. Click to copy highlighted text or the entire topic displayed in the Topic pane. You can paste your selection into another application or into your Notebook. (Open the Notebook window, click the Topic pane, and then press CTRL+V.)

Navigation & Topic. Click to display the Navigation pane in the left pane while viewing the Topic pane in the right pane. To close the Navigation pane and display only the Topic pane, click Topic Only.

Topic Only. Click to close the Navigation pane and display the Topic pane only. To display both panes, click the **Navigation & Topic** button.

Notebook. Click to open the Notebook, where you can store a list of topics of particular interest, along with your notes.

Glossary. Click to view an extensive glossary of related terms and definitions.

Help. Click to get Help for *Mastering Microsoft Visual Basic 5.*

Notebook Toolbar

Add to Notebook. Click to add the selected topic to your Notebook.

Delete. Click to delete the selected topic from your Notebook.

Print. Click to print topics or notes from your Notebook.

Paste. Click to paste the selected topic text or contents of the Clipboard into the Notebook window.

GoTo. Select a topic in the Notebook, and then click to display the topic text. You can also go to a specific topic by double-clicking the topic in the Notebook window.

The Menu Commands

Click a menu command to see a description of what it does.

File menu

File
Print... Ctrl+P
Exit

Edit menu

Edit
Copy   Ctrl+C
Notebook Ctrl+K

Navigation menu

Navigate
Next Topic   Ctrl+N
Previous Topic   Ctrl+U
Back   Ctrl+B
History   Ctrl+H
Related Info   Ctrl+R

View menu

View
Topic Only   Ctrl+O
✔ Navigation & Topic   Ctrl+A
✔ Contents   Ctrl+T
Index   Ctrl+I
Find   Ctrl+F
Magnify   ▶
Closed Caption   Ctrl+S
Internet Launch Dialog

Help menu

Help
Help Topics
Welcome Screen
Tour
Glossary   Ctrl+G
Mastering Series Web Site
About...
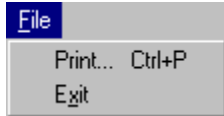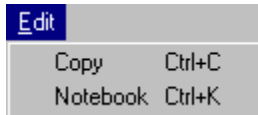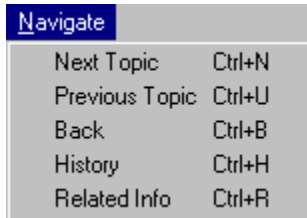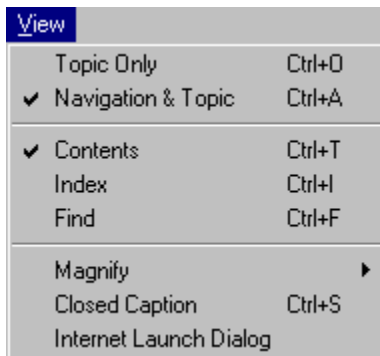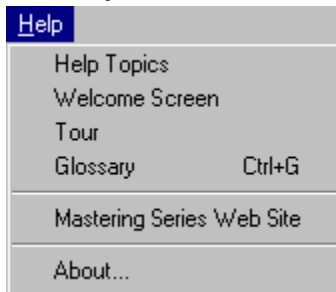
When the standard Windows **Print** dialog box appears, enter or click your the options you want, and then click OK to print.

If you are printing from the Notebook window, select the options you want in the **Print** dialog box, and then click OK to print.

      Related Topics

Closes the application.

Copies the text or graphics you selected in the Topic pane or Notebook. To paste the selection into another application, open the application, and then click **Paste** on the **Edit** menu, or use the key combination for the application's **Paste** command (CTRL+<KEY>).

 u **To paste text or graphics from the Topic pane into the Notebook window, copy the information to the Clipboard, and then do one of the following**

® Press CTRL+V.

® Right-click in the Notes pane of the Notebook window, and then click **Paste** on the shortcut menu.

® Click the **Paste** button.

Opens the Notebook, where you can mark topics of interest and make notes about these topics.

Moves to the next topic in the Navigation pane.

Moves to the previous topic in the Navigation pane.

Moves back through the topics you have viewed.

Displays a list of the topics you have viewed. To display a previously viewed topic click a topic in the History window.

Displays a list of topics related to the current topic. To display a related topic, click a topic from the list.

This is the same as clicking the **Related Information** menu at the bottom of the Topic pane.

Note If there is no related information for the topic in the Library, these options will appear dimmed.

Displays both the Navigation pane and Topic pane.

Displays the Topic pane only.

Displays the Contents in the Navigation pane.

Displays the Index in the Navigation pane.

Displays the Find window.

Displays the **Magnify** menu from which you can magnify or reduce text in the Topic pane or in any window (Sample Code, Tips, Closed Captions).

u **To magnify or reduce text, select one of the following options**

® **75%** reduces all text to 75% of its normal size.

® **100%** returns all text to its normal size.

® **150%** magnifies all text to 150% of its normal size.

® **200%** magnifies all text to 200% of its normal size.

Displays the text of video segments in a pop-up window. You can move and resize the window to view the video and closed caption simultaneously.

Note The pop-up window will appear in the same location as it was when you last opened it.

Displays a dialog box when you launch Internet Explorer from within *Mastering Microsoft Visual Basic 5*.

Opens this Help file.

Displays the Welcome screen, where you can take the Tour or watch a video introduction of *Mastering Microsoft Visual Basic 5.*

Launches the Tour for *Mastering Microsoft Visual Basic 5*.

Displays a glossary of terms and definitions.

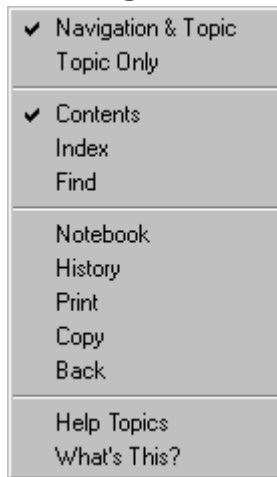Launches Internet Explorer 3.0 to the *Mastering Series* Web page on the Microsoft Web site.

Displays the name, version, and copyright information for this product.

The Shortcut Menus

A shortcut menu is available from the Viewer window and most supplementary windows, including the right pane of the Notebook window. The commands on a shortcut menu change depending on where you right-click the mouse. To display a shortcut menu, right-click in a window, and then click the menu command you want.

Click the following shortcut menus to display a brief description of each menu command.

Navigation and Topic Pane

✔ Navigation & Topic
Topic Only
✔ Contents
Index
Find
Notebook
History
Print
Copy
Back
Help Topics
What's This?

These commands appear when you right-click in the Navigation or Topic pane in the main Viewer window.

A check mark on this menu indicates the currently active pane, or window and mode.

When you select **Topic Only**, you can restore the Navigation pane by clicking **Navigation & Topic** on the menu.

Notebook Window

✔ Add to Notebook
Delete Selected Item
Goto
Print
Paste
Help Topics
What's This?
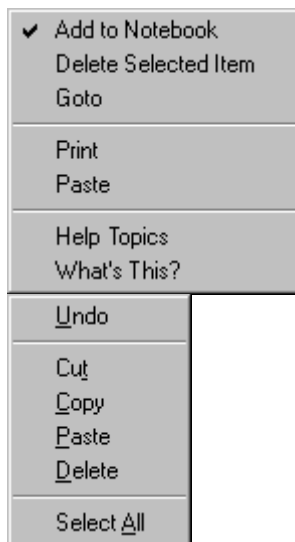
The left pane of the Notebook window displays these commands.

Undo
Cut
Copy
Paste
Delete
Select All

The right pane of the Notebook window displays these standard Windows editing commands.

History Window

Help Topics
What's This?
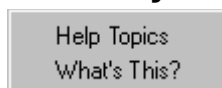
These commands appear when you right-click the History window.

Supplementary Viewer

| Print |
| Copy |
| Help Topics |
| What's This? |
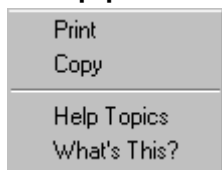
The active text or supplementary graphics viewers display these commands.

Note: A shortcut menu is not available in the Animation and Demonstration windows.

Displays both the Navigation and Topic panes in the main Viewer window.

Displays only the Topic pane in the main Viewer window. You can restore the Navigation pane by clicking **Navigation & Topic** on the shortcut menu.

Displays the Contents in the Navigation pane.

Displays the Index in the Navigation pane.

Displays the Find window in the Navigation pane.

Opens the Notebook window.

Opens the History window.

Opens the Windows **Print** dialog box.

Copies the selected text, or the entire text or illustration displayed in the window, to the Clipboard.

Opens the Mastering Series Help file.

Moves back to the previously viewed topic.

Provides context-sensitive Help for the active screen element.

Adds the displayed topic to the Notebook, where you can also add notes.

Deletes the selected Notebook entry.

Deletes the selected text in the Notes pane of the Notebook window.

Goes to the selected Notebook topic and displays the text and associated [media icons](#) in the Topic pane.

Opens the **Print** dialog box. You can print a selected Notebook entry or all entries with or without your notes. You can also print the notes associated with the selected Notebook entry, or print all of your notes. After selecting the options you want and clicking **Print**, the Windows **Print** dialog box appears.

Pastes text from the Clipboard into the Notes window.

Clears the previous edit made in the Notes window.

Cuts the highlighted text from the Notes window and copies it to the Clipboard.

Selects all text in the Notes window.

Using Setup to Uninstall

u **To uninstall *Mastering Microsoft Visual Basic 5* from the Setup program**

1. Run Setup from the CD-ROM.

2. Click **Remove All**.

Note   Do not remove any shared DLLs unless you are sure they are not being used by other applications.

Using the Control Panel to Uninstall

u **To remove *Mastering Microsoft Visual Basic 5* from your system by using the Control Panel, follow these steps**

1. In the Control Panel, click **Add/Remove Programs**.
3. Select *Mastering Microsoft Visual Basic 5*, and then click **Add/Remove**.
4. Click **Remove All**.

Note   Do not remove any shared DLLs unless you are sure they are not being used by other applications.

A context-sensitive Help topic is not available for this item. Right-click with the mouse to view **What's This?** Help.

Print. Click to print the entire topic displayed in the Topic pane.

Copy. Click to copy highlighted text or the entire topic in the Topic pane. You can paste the selection into another application or into your Notebook. Open the Notebook window, click the right pane, and press CTRL+V.

Navigation & Topic. Click to display the Navigation pane on the left of the window or while viewing the Topic pane on the right. To close the Navigation pane and display only the Topic pane, click **Topic Only**.

Topic Only. Click to close the Navigation pane and display the Topic pane only. To display both panes of the window, click **Navigation & Topic**.

Notebook. Click to open the Notebook, where you can store a list of topics of particular interest, along with your own notes about them.

Glossary. Click to view an extensive glossary of terms and definitions related to Visual Basic.

Help. Click to get Help for *Mastering Microsoft Visual Basic 5*.

Add to Notebook. Click to add the selected topic to your Notebook.

Delete. Click to delete the selected topic from your Notebook.

Print. Click to print topics or notes from your Notebook.

Paste. Click to paste selected topic text or contents of the Clipboard to your notes in the Notebook window.

Go to Topic. Select a topic in the Notebook, and then click to display the topic in the Topic pane.

You can also go to a topic by double-clicking the topic in the Notebook window.

Contents. Click to view the Contents in the Navigation pane, and then click an entry to display a topic in the Topic pane.

Index. Click to view and search through the Index of the Course and Library.

Find. Click to search for a word or topic. You can type a word or phrase, or select a previous search string from the drop-down list. *Mastering Microsoft Visual Basic 5* supports Boolean search operators.

Click to display **Related Information**, and then click a topic from the list to display it in the Topic pane.

Back. Click to go back through the topics you have viewed previously.

To see a list of all topics you have viewed during the current session, click **History** on the **Navigate** menu.

Previous. Click to move to the previous topic in the Navigation pane.

Next. Click to move to the next topic in the Navigation pane.

When you click the **Contents** button at the top of the Navigation pane, you can select a topic in the Course or Library, scroll through the topics, and click to view a topic in the Topic pane.

You can change from displaying the Contents in the Navigation pane to display the Index or Find window. To display the Index or Find window, click one of the Navigation buttons at the top of the Navigation pane.

Index. Displays index entries related to particular topics in the Course and the Library.

Find. Displays the Find window, where you can search for a word or topic.

When you click the **Find** button at the top of the Navigation pane, you can search for a word or phrase, or select a previous search string from the drop-down list. To search for a phrase, enclose the phrase in quotation marks.

Click a search result to display the text in the Topic pane.

You can switch the Navigation pane to display the Contents or Index by clicking one of these buttons at the top of the Navigation pane.

Contents. Displays topics for the Course or selections from the Library.

Index. Displays index entries related to particular topics in the Course and Library.

When you click the **Index** button at the top of the Navigation pane, you can click the text box and type the first few letters of a word. The Index will scroll to the closest entry, and list related topics in the list box at the bottom. Click an index entry to display the topic text in the Topic pane.

You can switch the Navigation pane to display Contents or the Find window by clicking one of these buttons at the top of the Navigation pane.

Contents. Displays topics for the Course or selections from the Library.

Find. Displays the Find window, where you can search for a word or topic.

The **Topic pane** always displays content, whether it is a selection from the Contents in the Navigation pane, a topic related to an index entry, or a topic you select from the results in the Find window. Click a topic in the Navigation pane to display it in the Topic pane.

Print Notebook dialog box. Click a selection to print the current Notebook topic or all topics stored in your Notebook. You can print your notes, topic text, or both.

Lists the **Notebook entries**, including those topics to which you have added notes. To display a Notebook entry in the Topic pane, double-click it, or select the topic and click the **Go To** button on the toolbar.

To add, edit, or delete notes for a particular topic, click the entry, and then add, revise, or delete the notes displayed in the Notes window.

Displays the **Notes** that you have created for particular topics. To add or revise your notes, click the Notes pane in the Notebook window.

Pop-up illustrations can be displayed in two sizes. Click the illustration to expand or reduce the window.

You can print or copy an illustration to the Clipboard by using the appropriate command on the shortcut menu. Right-click the mouse, and then click **Print** or **Copy**.

The **Sample Code window** opens to the same size and location as when it was last closed. You can resize the window by dragging its borders.

You can select sample code to copy it to the Clipboard. Or, you can print or copy all of the sample code displayed in the window. Right-click the mouse to display the shortcut menu, and then click **Print** or **Copy**.

The **Self-Check answer window** opens to the same size and location as when it was last closed. You can resize the window by dragging its borders.

To view an answer, click the answer icon.

You can print or copy an answer to the Clipboard. Right-click the mouse to display the shortcut menu, and then click **Print** or **Copy**.

Note   You can print or copy the questions displayed in the Topic pane by clicking the **Print** button on the toolbar, or by using the shortcut menu in the Topic pane.

The **Tip window** opens to the same size and location as when it was last closed. You can resize the window by dragging its borders.

You can select a portion of a tip to copy it to the Clipboard. Or, you can print or copy the entire tip. Right-click to display the shortcut menu, and then click **Print** or **Copy**.

The **History window** opens to the same size and location as when it was last closed. You can move it, or resize the window by dragging its borders.

Click a topic in the History window to display the topic text in the Topic pane.

Note   You must use the mouse to select a topic in the History window. The keyboard is disabled in this window.

The History window stays on top of the main Viewer window until you close it.

The **Closed Caption window** opens to the same size and location as when it was last closed. You can move it, or resize the window by dragging its borders.

You can select a portion of the text and copy it to the Clipboard. Or, you can print or copy the entire text displayed in the window. Right-click the mouse to display the shortcut menu, and then click **Print** or **Copy**.

Increasing System Performance

If your computer meets minimum system requirements only, try the following procedures to increase system performance.

® Close all open applications when running the title.

u Have Windows 95 manage virtual memory settings

1. To display system properties in Windows 95, click here.
   .

      2.   Click the **Performance** tab.

      3.   Click the **Virtual Memory** button, and then click **Let Windows manage my virtual memory settings (recommended)**.

u Defragment your hard drive

1. Click the Windows 95 **Start** button, and then point to **Programs**.

2. Point to **Accessories**, point to **System Tools**, and then click **Disk Defragmenter**.

Note   To install the Disk Defragmenter, double-click the Add New Programs icon in the Control Panel.

---

u Optimize CD-ROM drive settings

1. To display system properties in Windows 95, click here.
   .

      2.   Click the **Performance** tab.

      3.   Click the **File System** button, and then click the **CD-ROM** tab.

      4.   Increase the **Supplemental cache size**, and check that the settings and speed are correct in the **Optimize access pattern for** drop-down list box.

      Related Topics

Audio Performance Problems

Mastering Microsoft Visual Basic 5 uses the following type of sound file:

® WAVE (*.wav): Digitized audio

To hear these sounds, you must have a sound card that is capable of playing WAVE sounds.

Your sound card uses a special piece of software called a "sound driver" to communicate with your computer. In some instances, you may not hear any sounds when using *Mastering Microsoft Visual Basic 5*. Usually, this is because your sound driver is not installed or is configured improperly. If you do not hear any sounds, or get an error message saying that there is a problem with your sound card or sound driver when you start the program, the WAVE portion of your sound driver may be either improperly configured or not installed.

  Related Topics

I got an error message about my sound

The two most common error messages about WAVE sounds are:

® "A sound card is required to run *Mastering Microsoft Visual Basic 5*."

® "*Mastering Microsoft Visual Basic 5* cannot get the sound device right now, it's in use elsewhere, try again."

If you receive the first error message, it usually indicates that your sound driver is either not installed, not installed correctly, or not configured correctly. If you receive the second error message, it usually indicates that your sound driver is in use by another open program. Solve this by closing all other open programs, and restarting *Mastering Microsoft Visual Basic 5*.

For more information about troubleshooting WAVE errors, see I can't hear any sounds.

I can't hear any sounds

u If sound does not play at all

1. Check the volume on your sound card or speakers, and if necessary, turn up the volume.

2. Check that the speakers are connected to your computer, that the power switch is on, and that the batteries (if any) are functional.

3. Check that the software for the audio card is installed correctly, and if necessary, reinstall it.

4. Ensure that the audio card is pressed securely into its slot, or change a jumper setting on the audio card.

5. If you have both an audio card and special software that bypasses the audio card to play sounds through the PC speaker, try removing or disabling the PC speaker driver. This product requires MPC-compatible audio; it is not meant to run with the PC internal speaker only or any combination of the speaker and special software.

Checking Your Sound Card

u To ensure that your sound card is installed properly

1. To display system properties for Windows 95, click here.
   ▪.

      2.   Click the **Device Manager** tab, double-click **Sound, video and game controllers**, and then double-click the name of your sound card.

      3.   Click the **General** tab, and under **Device status**, check that the device is working properly.

Note   If your sound driver is not working properly, contact the manufacturer of your sound card.

My sounds are "scratchy"

Sound distortion is often caused by sending a higher volume or amplitude of sound than speakers are able to handle. If the volume control on your audio card is set too high, it may cause distortion from the amplifier on the audio card. Sometimes lower-quality speakers distort at a lower volume than higher-quality speakers.

For example, if your audio card or WAVE file output volume is set to near maximum, it will cause distortion. To change your audio card settings, refer to the documentation that came with your audio card.

u To adjust the volume control

1. To open volume control, click here.

   .

   2.   Adjust the volume controls.
   3.   Click the **Close** box.

My sounds are cut off

Most audio cards can play only one sound at a time; therefore, other products with sound may interrupt sounds from this product. Some programs may take over the audio capability and prevent other Windows programs from creating sounds.

If you think you have another program that produces sounds that could interrupt sounds from this product, do not run the two programs simultaneously.

My sounds "skip"

If sound breaks up or "skips" periodically, it usually indicates that the CD-ROM drive does not meet the full MPC II (Multimedia PC - Level 2) specifications, and that it needs to be upgraded.

You can continue to use your CD-ROM drive to run this program, but sound will continue to skip.

u CD-ROM Drive requirements

® Double-speed CD-ROM: This CD-ROM drive can transfer data from the CD-ROM at 300 KB per second while using less than 40% of the CPU bandwidth, and has an average seek time of less than 400 milliseconds.

® MS-DOS CD-ROM Extensions (MSCDEX) version 2.2 or later.

Checking and Changing Video Settings

Mastering Microsoft Visual Basic 5 requires that your <u>video driver</u> supports a screen resolution of *at least* 640 x 480 (the program will support higher screen resolutions, but we recommend you use 800 x 600 or greater). In addition, the program requires that your video driver is able to display <u>256 colors</u>.

u To check video settings or change them

1. To view display properties in Windows 95, click here.
   .

      2.   Click the **Settings** tab.

      3.   Under **Desktop Area**, drag the slider.

Note   Your monitor and display adapter determine whether you can change your screen resolution.

If your video driver is not working properly, contact the manufacturer of your video card.

Related Topics

The display driver supports less than 256 colors

Mastering Microsoft Visual Basic 5 requires a <u>video driver</u> that supports a screen resolution of at least 640 x 480, although the program will support higher screen resolutions. In addition, the program requires that the video driver be able to display <u>256 colors</u>.

u To check video settings or change them:

1. To view display properties in Windows 95, click here.
   .

    2.   Click the **Settings** tab.

    3.   Under **Desktop Area**, drag the slider.

Note   Your monitor and display adapter determine whether you can change your screen resolution.

If your video driver is not working properly, contact the manufacturer of your video card.

My machine "hangs"

If you use accelerated video drivers, video drivers with more than 256 colors, or high-resolution video drivers, the product may not display videos correctly. For example, you may see garbled images, or the product may stop running when you play a video.

If you encounter these problems, change to a standard video mode, such as a 640 x 480 resolution with 256 colors.

 u To check video settings or change them:

1. To view display properties in Windows 95, click here.

      2.   Click the **Settings** tab.

      3.   Under **Desktop Area**, drag the slider.

Note   Your monitor and display adapter determine whether you can change your screen resolution.

When You Have a Question

If you have a question about *Mastering Microsoft Visual Basic 5*, first refer to this Help file, or read the CD-ROM jewelcase booklet. If you cannot find the answer, contact Microsoft Technical Support.

If you still have a question, Microsoft offers technical support and services ranging from no-cost and low-cost online information services (available 24 hours a day, 7 days a week) to annual support plans. A brief description of these services is provided in the following sections.

Note   The services and prices listed here are available in the United States and Canada only. Services and prices outside of these countries may vary.

For information about Microsoft subsidiary offices, see Product Support Worldwide.

    Related Topics

Product Support Within the United States and Canada

In the United States, no-charge support from Microsoft support engineers is available via a toll call between 6:00 A.M. and 6:00 P.M. Pacific time, Monday through Friday, excluding holidays. Call (206) 635-7033.

In Canada, support engineers are available via a toll call between 8:00 A.M. and 8:00 P.M. Eastern time, Monday through Friday, excluding holidays. Call (905) 568-3503.

When you call, you should be at your computer and have the appropriate product documentation. Be prepared to give the following information.

® The version number of the Microsoft product you are using.

® The type of hardware you are using.

® The exact wording of any messages displayed on your screen.

® A description of what happened, and what you were doing when the problem occurred.

® A description of how you tried to solve the problem.

Electronic Services

Information and Electronic Services

Microsoft provides easy access to the latest technical and support information for Microsoft products. You can access a variety of no-cost and low-cost and information services 24 hours a day, 365 days a year.

Internet services and the Microsoft Network (MSN)

Access the Microsoft Frequently Asked Questions, Software Library, Knowledge Base, customer-to-customer newsgroups, and other technical information and services on our Internet sites.

® On the World Wide Web and MSN, go to **http://www.microsoft.com/support/**

® For FTP access, go to **ftp://ftp.microsoft.com**

Microsoft FastTips

Call (800) 936-4100 on a touch-tone telephone. Receive automated answers to common technical problems, and access popular articles from the Microsoft Knowledge Base, all of which are delivered by a recording or by fax.

After you reach FastTips, you can use the following keys on your touch-tone telephone.

® To advance to the next message, press *****.

® To repeat the current message, press 7.

® To return to the beginning of FastTips, press #.

Microsoft Download Service

Access via modem, sample programs, device drivers, patches, software updates, and programming aides (1200, 2400, or 9600 baud, no parity, 8 data bits, 1 stop bit). In the United States, call (206) 936-6735. In Canada, call (905) 507-3022.

Standard Support

In the United States, unlimited no-charge support is available via a toll call between 6:00 A.M. and 6:00 P.M. Pacific time, Monday through Friday, excluding holidays. For technical support for *Mastering Microsoft Visual Basic 5*, call (206) 635-7033.

In Canada, support engineers are available via a toll call between 8:00 A.M. and 8:00 P.M. Eastern time, Monday through Friday, excluding holidays. Call (905) 568-3503.

When you call, you should be at your computer and have the appropriate product documentation. Be prepared to give the following information.

® The version number of the Microsoft product you are using.

® The type of hardware you are using, including network hardware, if applicable.

® The operating system you are using.

® The exact wording of any messages displayed on your screen.

® A description of what happened, and what you were doing when the problem occurred.

® A description of how you tried to solve the problem.

Priority Support

Microsoft Technical Support offers priority telephone access to Microsoft support engineers 24 hours a day, 7 days a week, except holidays. Support is available on a per-incident basis, and by annual subscriptions.

In the United States, call (800) 936-5700; $25.00 (U.S.) per incident, billed to your VISA, MasterCard, or American Express.

In the United States, call (900) 555-2000; $2.00 (U.S.) per minute, $25.00 (U.S.) maximum. Charges appear on your telephone bill. Not available in Canada.

In Canada, call (800) 668-7975; $30.00 per incident, billed to your VISA, MasterCard, or American Express.

Text Telephone

Microsoft text telephone (TT/TDD) services are available for the deaf or hard-of-hearing. In the United States, use a TT/TDD modem, and dial (206) 635-4948 between 6:00 A.M. and 6:00 P.M. Pacific time, Monday through Friday, excluding holidays. In Canada, use a TT/TDD modem, and dial (905) 568-9641 between 8:00 A.M. and 8:00 P.M. Eastern time, Monday through Friday, excluding holidays.

Other Support Options

Microsoft TechNet

Microsoft TechNet is the front-line resource for fast, complete answers to technical questions on Microsoft systems and desktop products. Information available on TechNet ranges from crucial data on client-server and workgroup computing, systems platforms, and database products, to the latest on support for Microsoft Windows and Macintosh applications. As a TechNet user you receive:

® Twelve monthly compact discs containing the Microsoft Knowledge Base, Microsoft operating systems product resource kits, customer solutions, key Microsoft conference session notes, and other valuable information.

® Twelve monthly supplemental compact discs (drivers and patches) containing the Microsoft Software Library.

® A dedicated Microsoft TechNet forum on CompuServe (type **GO TECHNET**).

® WinCIM, a Windows application for accessing CompuServe.

® A 20% discount on Microsoft Press books.

For more information about Microsoft TechNet, in the U.S. and Canada, call (800) 344-2121, between 7:00 A.M. and 7:00 P.M. Central time, Monday through Friday. Outside the U.S. and Canada, contact your Microsoft subsidiary, or call (303) 684-0914.

Microsoft Authorized Support Centers

Microsoft Authorized Support Centers (ACSs) are a select group of strategic support providers who offer high-quality customized support services that span the complete systems life cycle of planning, implementation, and maintenance of your multi-vendor environment. Services include:

® On-site support

® Integration and implementation services

® Help desk services

® Hardware support

® Development resources

Choosing an ASC enables you to work with one vendor for all of your technical support and service needs. You can also combine ASC services with your in-house help desk, or the Microsoft support service option that best fits your information technology support needs.

For more information about the ASC program, in the U.S. call (800) 936-3500 between 6:00 A.M. and 6:00 P.M. Pacific time, Monday through Friday, excluding holidays. In Canada, call (800) 563-9048 between 8:00 A.M. and 8:00 P.M. Eastern time, Monday through Friday, excluding holidays.

Product Training and Consultation

Microsoft Solution Providers are independent developers, consultants, and systems analysts who offer fee-based technical training and support, industry knowledge, objective advice, and a range of value-added services to companies of all sizes. Solution Providers work with organizations to help implement computing systems that take advantage of the current new technologies.

For the name of a Microsoft Solution Provider near you, in the U.S. call (800) 426-9400 between 6:30 A.M. and 5:30 P.M. Pacific time, Monday through Friday, excluding holidays. In Canada, call (800) 563-9048 between 8:00 A.M. and 8:00 P.M. Eastern time, Monday through Friday, excluding holidays.

Product Support Worldwide

If you are outside the United States and have a question about a Microsoft product, first:

® Consult the documentation and other printed information included with your product.

® Check online Help.

® Consult electronic options, such as CompuServe forums or bulletin boards, if available.

If you cannot find a solution, you can receive information about how to obtain product support by contacting the Microsoft subsidiary office that serves your country.

Calling a Microsoft Subsidiary Office

When you call, you should be at your computer and have the appropriate product documentation. Be prepared to give the following information.

® The version number of the Microsoft product you are using.

® The type of hardware you are using, including network hardware, if applicable.

® The operating system you are using.

® The exact wording of any messages displayed on your screen.

® A description of what happened, and what you were doing when the problem occurred.

® A description of how you tried to solve the problem.

Microsoft subsidiary offices, and the countries they serve, are listed as follows. If there is no Microsoft office in your country, contact the establishment from which you purchased your Microsoft product.

Argentina

Australia

Austria

Europe

Belgium

Bolivia

Brazil

Canada

Caribbean

Czech Republic

Chile

Colombia

Denmark

Dubai

Equador

England

Finland

France

French Polynesia

Germany

Greece

Hong Kong

Hungary

Indonesia

India

Your computer uses hardware called a video card (or video display adapter) to display images on your video monitor. Your computer also uses software called a *"video driver"* to communicate with your video card (and vice versa).

Video color depth refers to the number of colors that your video driver is capable of displaying simultaneously on your monitor.   The maximum number of colors that you can display is determined by a combination of two factors: the amount of video RAM (or VRAM) that your video card has, and the screen resolution.

Most video cards can display 256 colors at a screen resolution of 640 x 480. Greater color depth, or greater screen resolution with 256 or more colors, may require additional VRAM.

Color depth is referred to in terms of "bits" (for example, 8-bit). The number of colors you see is equal to the number 2 to the power of the number of bits to which your color depth is set. The following is a list of the most common color depths and the number of colors that they represent:

2 bit	4 colors
4 bit	16 colors
8 bit	256 colors
16 bit	65,536 colors (often referred to as 64K or 64,000 colors)
24 bit	16,777,216 colors (often referred to as 16M or 16 million colors)

DPI = Dots per inch

Microsoft de Argentina S.A.
Customer Service: (54) (1) 819-1900
Fax: (54) (1) 819-1921
Technical Support for Development Tools: (54) (1) 819-1900
Technical Support for Windows 95: (54) (1) 314-0560

Microsoft Pty. Ltd.
Installation Support: (61) (02) 870-2870
Fax: (61) (02) 805-0519
Bulletin Board Service: (61) (02) 878-5200
Technical Support: (61) (02) 870-2131
Sales Information Centre: (61) (02) 870-2100

Microsoft Ges.m.b.H.
Phone: 0222-68 7607
Fax: 0222-68 16 2710
Information: 0660-6520
Prices, updates, etc.: 0660-6520
Windows installation: 0660-6520
CompuServe: GO MSEURO (Microsoft Central Europe)
General Information about Microsoft Technical Support in Central Europe:
Fax: 0049/2622/167006

Technical support: 0660-6511

Microsoft Belgium
Phone: (32) (2) 730-3911
Fax: (32) (2) 726-9609
Technical Support:
   (32) (2) 513-3274 (Dutch speaking)
   (32) (2) 502-3432 (English speaking)
   (32) (2) 513-2268 (French speaking)
Bulletin Board:
   (32) (2) 726-8545
   (14400/1200/2400/9600 bd, 8N1, ANSI)

(Argentina)
Microsoft de Argentina S.A.
Customer Service: (54) (1) 819-1900
Fax: (54) (1) 819-1921
Technical Support for Development Tools: (54) (1) 819-1900
Technical Support for Windows 95: (54) (1) 314-0560

Microsoft Informatica Ltda.
Phone: (55) (11) 514 -7100
Fax: (55) (11) 514 - 7106/514-7107
Technical Support Phone: (55) (11) 871-0090
Technical Support Fax: (55) (11) 262-8638
Technical Support Bulletin Board Service: (55) (11) 872-4106
Technical Support Help by Fax (55) (11) 871-4701

Microsoft Canada, Inc.
Head Office Phone: (905) 568-0434
Customer Support Centre: (800) 563-9048
MS Office Technical Support Phone: 1 (905) 568-2294
Priority Support Information: 1 (800) 668-7975
Text Telephone (TT/TDD) 1 (905) 568-9641
Technical Support Bulletin Board Service: 1 (905) 507-3022

Microsoft Caribbean, Inc
Tel: (809) 273-3600
Fax: (809) 273-3636
Technical Support: (214) 714-9100

Microsoft Chile S.A.
Phone: (56) (2) 330-6000
Fax: (56) (2) 330-6190
Customer Service: 56) (2) 800-213121
Personal Operating System and Applications:
Phone: (56) (2)-330-6222
Fax: (56) (2) 341-1439

Microsoft Colombia
Tel: (571) 618 2245
Soporte Tecnico: (571) 618 2255
Fax:(571) 618 2269

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Fax: (+42) (2) 2423-4343
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Microsoft Denmark AS
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Technical Support: (45)   (44) 89 01 11
Microsoft Sales Support: (45) (44) 89 01 90
Microsoft BBS:
    (45) (44) 66 90 46
    (Document 303030 in FaxSvar contains detailed instructions)
Microsoft FaxSvar: (45) (44) 89 01 44

Microsoft Middle East
Phone: (971) 4 513 888
Fax: (971) 4 527 444

Microsoft Corporation Equador S.A.
Phone: (593) 2 460-447, (593) 2 460-451
Customer Service: (593) 2 460-453, (593) 2 460-458
Technical Support: (593) (2) 463-094

(United Kingdom)
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   (01734) 27-0065 (up to 14.4Kbaud, n, 8, 1)
Fax Information Service (01734) 27-0080
Customer Support: (01734) 27-1000
Developer Support: (01734) 27-1414
Advanced Systems Support: (01734) 27-1007

Microsoft OY
For Technical Support, please contact your local dealer.
Phone: (0358) (90) 525 502 500
Microsoft FaxSvar: (46) (0)8 752 29 00
    (Information in Swedish and English)
Microsoft BBS:
    (46) (0) 8 750 47 42
    (Information in Swedish and English)
Microsoft MSDL: 90-455 03 66
Microsoft FastTips: 90-525 502 550

Microsoft France
Phone: (33) (1) 69-86-46-46
Telex: MSPARIS 604322
Fax: (33) (1) 64-46-06-60
Technical Support Phone: (33) (1) 69-86-10-20
Technical Support Fax: (33) (1) 69-28-00-28
Fax Information Service: (33) 36-70-13-13

(France)
Microsoft France
Phone: (33) (1) 69-86-46-46
Telex: MSPARIS 604322
Fax: (33) (1) 64-46-06-60
Technical Support Phone: (33) (1) 69-86-10-20
Technical Support Fax: (33) (1) 69-28-00-28
Fax Information Service: (33) 36-70-13-13

Microsoft GmbH
Phone: 089-3176-0
Telex: (17) 89 83 28 MS GMBH D
Fax: 089-3176-1000
Information: 089-3176 1199
Prices, updates, etc.: 089-3176 1199
CompuServe: GO MSEURO (Microsoft Central Europe)
Bulletin board, device drivers, tech notes:
   Btx: *microsoft# or *610808000#
Standard Support: Installation and Handling
Windows 95: 089 / 31 76 - 11 15
General information about Microsoft Technical Support in Central Europe:
FAX: 02622/167006

Microsoft Hellas, S.A.
Phone: (30) 1 6806-775 through (30) 1 6806-779
Fax: (30) 1 6806 780

Microsoft Hong Kong Limited
Microsoft Hong Kong Limited Phone (852)-2804-4200
Microsoft Hong Kong Limited Fax (852)-2560-2217
Product Support Services (852)-2804-4222
PSS Faxback Service: (852)-2535-9293
Microsoft Club Upgrade Centre: (852)-2880-5085
Microsoft Club Member Hotline: (852)-2516-5113
Technical Support: (852)-2804-4222

Microsoft Kft.
Phone: (+36) (1) 268-1668
Fax: (+36) (1) 268-1558
Microsoft Hotline/Customer Service: (+36) (1) 2MS-INFO (267-4636)

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Developer Support: (01734) 27-1414
Advanced Systems Support: (01734) 27-1007

Microsoft India
Phone: (01) (91) 646 0694, 646 0767, 646 0813
Fax: (01) (91) 646-0813

Indonesia - Jakarta
Technical Support
Phone: (6221) 572-1060
Fax: (6221) 573-2077

Microsoft Israel Ltd.
Phone: 972-3-613-0833
Fax: 972-3-613-0834

Microsoft SpA
Phone: (39) (2) 7039-21
Fax: (39) (2) 7039-2020
Microsoft by Fax (Fax-on-demand service):
   (39) (2) 70-300-703
Customer Service (New product info, product literature):
   (39) (2) 70-398-398
Dealer Support (Customer Service for Dealers only):
   (39) (2) 70-398-388
Bulletin Board: (39) (2) 7030-0102
Technical Support: (39) (2) 70-398-351

Microsoft Company Ltd.
Phone: (81) (3) 5454-8000
Fax: (81) (3) 5454-7972
PSS Technical Support Fax: (81) (3) 5454-7955
Customer Service Phone (Version Upgrade/Registration)
Phone: (81) (3) 5454-2305
Fax: (81) (3) 5454-7952
Channel Marketing (Pre-sales Product Support) Information Center
Phone: (81) (3) 5454-2300
Fax: (81) (3) 5454-7951

Microsoft CH
Phone: (82) (2) 531-4500
Fax: (82) (2) 555-1724
Technical Support: (82) (2) 531-4800
Windows Tech Support Line: (82) (2) 563-0054
Technical Support Fax: (82) (2) 531-4600
Technical Support Bulletin Board Service: (82) (2) 538-3256

(German speaking Switzerland)
Microsoft AG
Phone: 01-839 61 11
Fax: 01-831 08 69
Prices, Updates: 01-839 61 11
Documentation: Phone: 155 59 00
Fax: 064-224294,
Microsoft Info-Service
Postfach, 8099 Zürich
Windows, Windows for Workgroups, Printing System: 01/342-4085
General information about Microsoft Technical Support in Central Europe:
FAX: 0049/2622/167006

Microsoft Luxemborg
Phone: +32 2 730 39 11
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CompuServe: (32) 2-2150530 (GO MSBEN)
Technical Support:
+32 2 513 32 74 (Dutch speaking)
+32 2 502 34 32 (English speaking)
+32 2 513 22 68 (French speaking)
Bulletin Board:
    +32 2 726 85 45
    (14400/1200/2400/9600 bd, 8N1, ANSI)

Microsoft (Malaysia) Sdn Bhd:
Phone: (60-3) 794-9595
Fax : (60-3) 791-6080

Microsoft México, S.A. de C.V.
Phone: (52) (5) 325-0910
Fax: (52) (5) 280-7940
Customer Service: (52) (5) 325-0911
Technical Support: (52) (5) 325-0912 Standard Support
Technical Support: (52)(5) 237-4800 Developers Tools and Advanced Systems
Fast Tips: (52)(5) 237-4894 (24 hours x 365 days service)
Bulletin Board Service:
    (52) (5) 628-6200
    (2400s/14400k baud, 8 bits, No parity, 1 stop bit, ANSI terminal emulation)
    (52) (5) 628-6202
    (14400k baud, 8 bits, No parity, 1 stop bit, ANSI terminal emulation)
    User: MSMEXICO, NO Password

Microsoft BV
Phone: 023-5689189
Customer Service: 023-5677700
CompuServe: 020-6880085 (GO MSBEN)
Technical Support:
023-5677877 (Dutch speaking)
023-5677853 (English speaking)
Bulletin Board:
    023-5634221
    (1200/2400/9600 bd, 8N1, ANSI)

Microsoft New Zealand Ltd.
Phone: 64 (9) 358-3724
Fax: 64 (9) 358-3726
Technology Link Centre (Technical Support):
Phone: 64 (9) 357-5575
Fax: 64 (9) 307-0516 and 357-5577

(United Kingdom)
Microsoft Limited
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   (up to 14.4Kbaud, n, 8, 1)
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Developer Support: (01734) 27-1414
Advanced Systems Support: (01734) 27-1007

Microsoft Norway AS
Phone: (47) (22) 02 25 00
Microsoft Sales Support: (47) (22) 02 25 80
Microsoft BBS:
   (47) 22 18 22 09
   (Document 404040 in FaxSvar contains detailed instructions)
Microsoft FaxSvar: (47) (22) 02 25 70
Technical Support: (47) (22) 02 25 50
Microsoft MSDL: 22 18 22 09
Microsoft FastTips: 22 02 25 70

(Australia)
Microsoft Pty. Ltd.
Installation Support: (61) (02) 870-2870
Fax: (61) (02) 805-0519
Bulletin Board Service: (61) (02) 878-5200
Technical Support: (61) (02) 870-2131
Sales Information Centre: (61) (02) 870-2100

(Argentina)
Microsoft de Argentina S.A.
Customer Service: (54) (1) 819-1900
Fax: (54) (1) 819-1921
Technical Support for Development Tools: (54) (1) 819-1900
Technical Support for Windows 95: (54) (1) 314-0560

Microsoft Philippines
Phone: (632) 811-0062
Technical Support:
Phone : (632) 892-2295/2495
Fax: (632) 813-2493

Microsoft Sp.z o.o.
ul. Grzybowska 80/82
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Technical Support:
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MSFT, Lda.
MSFT, Lda.Phone: (351) (1) 440-9200
Fax: (351) (1) 441-2101
Technical Support:
Standard Support (All Clusters): (351) (1) 440-9280/1/2/3
Fax : (351) (1) 441-1655

Microsoft Taiwan Corp.
Phone: (886) (2) 504-3122
Fax: (886) (2) 504-3121
Technical Support : (886) (2) 508-9501

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   (up to 14.4Kbaud, n, 8, 1)
Fax Information Service (01734) 27-0080
Customer Support: (01734) 27-1000
Developer Support: (01734) 27-1414
Advanced Systems Support: (01734) 27-1007

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Pre-Sales Information: (0345) 00-2000
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   (01734) 27-0065
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Fax Information Service (01734) 27-0080
Customer Support: (01734) 27-1000
Developer Support: (01734) 27-1414
Advanced Systems Support: (01734) 27-1007

Microsoft Singapore Pte Ltd
Phone: (65) 337-6088
Fax : (65) 337-6788
Customer Services Phone: (65) 433-5488
Customer Services Fax: (65) 339-9958
Product Support Phone: (65) 337-9946
Product Support Fax: (65) 337-6700

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Fax: (+386) (61) 1881 137
Technical Support: (+386) 61 123 23 54 or (+386) 64 331 020

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Fax: (+42) (2) 2423 4343
Technical Support:
Phone: (+42) (7) 312083

Microsoft South Africa
Phone: (27) 11 445 0000
Fax: (27) 11 445 0045 or (27) 11 445 0046
Technical Support (Toll Free): 0 802 11 11 04
(Toll): (2) 11 445 0100
Customer Service Centre: (27) 11 445 0145

Microsoft Iberica SRL
Phone: (34) (1) 807 99 99
Fax: (34) (1) 803 8310
Technical Support: 91 807 99 60
Customer Service: (34) (1) 804 0096
Fax Back telephone: 91 804 00 96

Microsoft AB
Phone: (46) (08) 752 09 29
Sales Support: (46) (8) 752 56 30
Microsoft FaxSvar: (46) (0)8 752 29 00
Microsoft BBS:
    (46) (8) 750 47 42
    (Document 202020 in FaxSvar contains detailed instructions)
Information on Technical Support: (46) (8) 752 09 29
Microsoft MSDL: 08-750 47 42
Microsoft FastTips: 08-752 29 00

Microsoft AG
Phone: (01) 839-6111
Fax: (01) 831-0869
Prices, updates, etc.: (01) 839-6111
CompuServe: GO MSEURO(Microsoft Central Europe)
Documentation:
Phone: 155-5900
Fax: (064) 224-294,
Microsoft Info-Service, Postfach, 8099 Zürich
Windows, Windows for Workgroups, Printing System: (01) 342-4085
Technical support (French speaking): (022) 738-9688
General information about Microsoft Technical Support in Central Europe:
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Microsoft Turkey
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Fax: (90) 212 258-5954

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Technical Support for Development Tools: (54) (1) 819-1900
Technical Support for Windows 95: (54) (1) 314-0560

(Uruguay)
Technical Support: (598) (2) 77-4934

Corporation MS 90 de Venezuela S.A.
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   (582)-91-4739
   (582)-91-3342
Fax: (582)-92-3835
Technical Support:
   (582)-993-5249
   (582)-993-9256

(United Kingdom)
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    (up to 14.4Kbaud, n, 8, 1)
Fax Information Service (01734) 27-0080
Customer Support: (01734) 27-1000
Developer Support: (01734) 27-1414
Advanced Systems Support: (01734) 27-1007

Top Support Issues in Interactive Media Applications

The following sections describe problems some customers have had with Interactive Media products, along with possible solutions.

Interactive Media products, ranging from kids' products to reference and geography titles, are split into three multimedia areas:

® CD-ROM

® Sound

® Video Playback

This table shows the current top issues for each of the areas based on the frequency of each support issue since the beginning of 1996. Three of the nine issues listed in the table are described in detail in the following sections (each one indicated by an asterisk).

Type	Top Multimedia Issue for Interactive Media Division (1/1/96 - 5/20/96 - Number of U.S. Phone Incidents)	3D MM	Cinemania 96	Encarta 96	EXP Nature	Leopard Spots	MSB Ocean	Music Cen 96	MM Oceans	Road Atlas 4.0	Streets 4.0	Total
CD-ROM	*CD-ROM Capacity Limit Exceeded	0	3	57	1	1	25	0	1	7	82	177
	CD-ROM Damaged	4	11	75	6	0	32	0	5	0	0	133
	*CD-ROM Cache Setting Wrong (Win 95)	1	3	16	0	0	8	0	3	1	34	66
Sound	*CD Audio MCI Driver(s) Not Installed	0	0	3	0	0	201	0	14	0	0	218
	Configuration Problems/Soundblaster 16	2	5	53	6	0	16	2	0	13	5	102
	MSACM - Broken by High DMA (HDMA)	1	1	55	2	1	8	0	1	0	0	69
Video	DVA.386 Breaks Video Playback	0	0	18	0	0	0	0	2	0	0	20
	Correct Video CODEC Not Installed	0	3	7	0	0	0	0	2	0	0	12
	No Video Media Control Device Installed	0	8	4	0	0	0	0	2	0	0	11

Issue 1: CD-ROM Capacity Limit Exceeded

Description

Not all CD-ROM drives can access all the data a CD-ROM can hold, so attempts to access files outside the readable area will result in errors. To read the entire CD-ROM, the customer either has to get the product on a non-CD-ROM medium (if available) or upgrade his or her system to a CD-ROM drive with sufficient capacity. In some cases, it is only necessary to upgrade the firmware of the CD-ROM.

Calls on this topic can be long because the problem can be caused by many factors and because this issue cannot be resolved in real time for the customer. The average length of a support phone call for this problem is more than 33 minutes.

The constantly changing hardware industry and the fact that many customers have no idea what CD-ROM drive they have can also make finding the source of the problem difficult. Even leading upgrade kits can use a variety of different vendors for the CD-ROM drive, although packaging may be the same.

See the Knowledge Base (article # Q141329) for more information about this issue.

Support Recommendation

Either don't create CD-ROM products that exceed the read capability of older CD-ROM drives or, if you absolutely must squeeze the last possible bit of data onto a CD-ROM, put those nonessential or infrequently used files in the areas that might not be readable by all CD-ROM drives.

Provide support groups with the physical location of files on the CD-ROM to help them troubleshoot errors reading files. If the support engineer knows that the problem file is well within the area that all CD-ROM drives can read, he or she can eliminate CD-ROM capacity as the problem and troubleshoot the problem more efficiently.

Issue 2:   CD-ROM Cache Setting Wrong (WIN 95)

Description

Incorrect cache settings for the CD-ROM drive hurt the performance of the drive (jumpy audio/video, read errors). Windows 95 might not be able to determine the correct cache setting during detection of the CD-ROM device. Generally, the support engineer will recommend that the supplemental cache size be set as large as possible. This advice is starting to appear in product README files, such as those for Bookshelf for Windows.

See the Knowledge Base (article # Q141368) for more information and for recommendations on how to specify the appropriate cache size for different media types.

Support Recommendation

Windows needs to do a better job of choosing the appropriate cache settings for CD-ROM drives, but until then, products that rely on a minimum level of CD-ROM performance need to recognize when that performance is not being delivered and help customers troubleshoot the problem. One way to help is to ship the Multimedia Troubleshooter (part of MSInfo 2.5) with your product.

Issue 3:   CD Audio MCI Driver(s) Not Installed

Description

The product cannot play CD Audio sound because the necessary drivers are not installed. For example, the Windows 95 typical installation does not install the CD Audio (CD Player) capability under some circumstances, such as if it was installed from floppy disks or the CD-ROM was not detected correctly during network installation.

Because of the unambiguous error message and straightforward solutions, the average length of support calls is only 12 minutes.

Depending on how the support engineer judges the capabilities of the customer, the engineer will either walk the customer through the actual driver installation or simply provide the customer with instructions.

Potentially complicating the problem is the chance that a customer does not have ready access to a Windows 95 CD-ROM that contains the necessary files, either because he or she purchased Windows 95 on floppy disk or because Windows 95 was preinstalled and the OEM did not provide disks.

We recently put the CD Audio drivers on MSDL (Microsoft Download) so that customers who fall into this group and have a modem can download the drivers and instructions. If a customer does not have a modem, he or she can contact the OEM or can call Windows support for additional assistance.

See the Knowledge Base (article # 139659) for more information about this issue.

Support Recommendation

In the short term, products that depend on a technology or driver should, at the very least, verify that the necessary driver and/or technology is installed. If not, a useful error message should be provided to help the users resolve the issue.

For the long term, we recommend that products recognize when a critical component is missing and actually walk the customer through the installation. For instance, a CD-ROM product requiring CD Audio support would actually alert the customer and launch an "intelligent" Windows setup program to install the component.

Support Maxim

The anonymous quote, "Every time history repeats itself the price tag goes up," illustrates the reason for this month's maxim:

Avoid Even/Odd (Flip/Flop) issues.

Description

When a product group decides to change a feature to eliminate support issues, it should understand why the feature was originally implemented. Doing so avoids accidentally swapping one set of problems for another between alternate releases.

The issue "CD Audio MCI Driver(s) Not Installed" shows how this maxim could be applied to prevent flip-flopping of issues between subsequent releases.

With a high frequency of support, CD Audio might not seem like the way to go about delivering audio on future CD-ROM products. But CD Audio was chosen over WAV audio or MIDI because WAV and MIDI audio also have a large number of support issues and are difficult for customers and support engineers to troubleshoot.

By comparison, the CD Audio issue is much easier to resolve. A strong case can be made for releasing more products using CD Audio as the primary source of sound and improving the product error messages and troubleshooting assistance. Taking this route could make it easy for customers to resolve the issue without calling AnswerPoint support.

For More Information

For more information, visit these web sites.

® **AnswerPoint:**   http://www.microsoft.com/supportnet/AnswerPoint/

® **Support Online:**   http://www.microsoft.com/support/

® **Knowledge Base:**   http://www.microsoft.com/kb