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WINDOWS XP MEDIA CENTER EDITION 2005



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PC Magazine®
Guide to Windows XP
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PC Magazine® Guide to Windows XP Media Center Edition 2005

Terry Ulick



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Terry Ulick has extensive experience chronicling the revolutions in PCs and producing television programming. He has written extensively on PC use since the late 1970s and was a columnist for *PC Magazine* in its earliest days. He went on to publish the first magazine on desktop publishing, *Personal Publishing*, in the mid 1980s and to write three of the first books on desktop publishing.

In 1995 he co-founded the first online digital photo service for America Online, PicturePlace, an AOL Greenhouse Venture.

From there, he worked as Executive Director of Business Development for Tribune Media Services, where he was responsible for TV listings and movies show time content development. The products he developed put TV information into Microsoft products such as MSN TV, WebTV, UltimateTV, and Media Center. Currently, he is the President and Co-Founder of Good Time Networks, one of the first generation of broadband-based networks to power Media Center Edition PCs with shows such as Good Time Wine and Camp US that can be viewed directly from the Internet.

The combination of his editorial experience and his inside knowledge of the planning and delivery of entertainment-based content to PC/TV devices makes him uniquely qualified to write this book.

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Introduction: The Living Room Revolution

Perhaps you've been a participant in many of the recent technology "revolutions." If you're like me you've probably seen writing go from typewriting to desktop publishing, cameras go from film to digital, recorded music go from vinyl albums to cassettes to CD-ROMs and then to MP3s downloaded from the Internet.

It is doubtful that today you would want to purchase a turntable, cassette deck, or even a CD player—except perhaps to play some old recordings you have. You probably could add film cameras and typewriters to that list too.

So now I'll pose the next question to the children of the revolution: as of today would you buy a personal computer, DVD player or recorder, MP3 jukebox, or any personal video recorder (or PVR) device such as TiVo or ReplayTV?

I hope not! You're a child of the digital revolution and those devices are the problem, not the solution.

If you're reading this book, you have heard the news: For the price of a good personal computer you can have one device that can:

- Play, record, and store hundreds of hours of TV programs.
- Burn DVDs, audio CDs, MP3s, and DVD MP3s.
- Store, catalog, and display all of your digital photographs and videos.
- Store, manage, and play your complete music library—with visualizations.
- Play DVDs and access all the "computer-only" content on them too.
- Access TV listings and see them from programs you are watching—or recording.
- Network and distribute TV programs, music, video files, and pictures throughout your home.
- Play and pause live FM radio and Internet radio broadcasts.
- Control all of the above functions using one remote control.

A Windows XP Media Center Edition PC is the first real home entertainment device to blend the features of a TV, DVD player/recorder, audio and MP3 player/recorder, PVR, and content from the Internet in one affordable consumer electronics product. Oh, and I guess it's only fair to mention you get a top-of-the-line personal computer thrown in too since it's the engine that powers all of that functionality.

As much as Windows XP Media Center Edition PCs are sold as, well, PCs, I like to think of them as media servers. PCs power a lot of things in life that we aren't even aware of. On a recent flight I had the first seat behind the cockpit and before the flight I heard a technician telling the navigator "Just hit Control+Alt+Delete." Yikes! The navigator was rebooting the laptop that held the flight plans. You can't always see them, but PCs perform all sorts of duties in the new world order.

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That's why I've put my Windows XP Media Center Edition PC in my entertainment center cabinet. It's busy acting as my TV tuner. It's recording whatever I watch in real time and allowing me to pause and rewind the show I'm watching. I set it to record all my favorite shows. I use it to listen to music. I watch DVDs from it. I watch and store my home movies with it. And when I'm not doing anything with it, it displays all of my personal photographs in a beautiful slideshow on my TV screen.

I don't have a computer monitor attached to it—just a TV. I don't even use a keyboard or a mouse with it. I just use a remote control. What about computing? I realized that most of my real computing was done at work. I was really using my computer at home for entertainment: burning MP3s, storing pictures from my digital camera, or making edits of my videos.

All of that can be done using a TV and remote control when you have a Windows XP Media Center Edition PC. About the only things I don't use it for are writing e-mails and accessing the Internet. I can do those things with it too—I just prefer to do that at a desk using my laptop rather then from my sofa. But even that habit is starting to change.

Owning a Windows XP Media Center Edition PC has revolutionized my living room. Gone are all of the devices that used to fill shelves next to my TV. The VCR, the DVD player, my TiVo, and my stereo are all now collecting dust in the closet. I just stopped using them all once I started using my Media Center PC. Where there was once an array of devices that couldn't work with one another and needed a coffee table full of remote controls, there is one device and one remote control. All of my entertainment choices are displayed from an onscreen menu and everything works the same way using the same user interface.

As much as this book is about how to buy and use a Media Center PC, down deep it is a book about how owning one changes the way you watch TV and manage your entertainment content. Your system will put you in control of your TV viewing better than any other device. It puts TV programs, DVDs, your pictures, videos, and music into an easily accessible environment that not only allows you to access your media, but also to share it just as easily.

Like all good revolutions, this one empowers you.

Now, let's learn how to use that power wisely.

Who's This Book For?

Aside from the obvious fact that this book is geared towards owners of Media Center PCs, this book is for:

- Anyone who wants to put the media playing features of their personal computer to work in their home powering their total entertainment experience.
- People who have built (or want to build) music, video, and picture libraries on their personal computer and would like to use a TV to view or listen to them.
- People who like the idea of using digital video recording for TV shows and being able to control their viewing of TV in a more convenient manner.

What You Need to Use This Book

Users of this book should have a Media Center PC, a high-speed connection to the Internet (although dial-up will also work), and a TV source such as cable, satellite, or antenna near the computer.

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Conventions Used in This Book

To help you get the most from the text and keep track of what's happening, we've used a number of conventions throughout the book:

- When we introduce them, we highlight *important words* in italics.
- We show keyboard strokes like this: Ctrl+A.
- We present URLs, file names, and directory names in a monofont `like this`.

Icons Used in This Book

Following is a brief description of the icons used to highlight certain types of material in this book.



Tip

Each Tip gives you additional information that adds to the topic under discussion. The information typically springs from something in the immediately preceding paragraph and provides a succinct suggestion that you might want to follow up on while working through the chapter. In effect, a Tip says, "You should try this as well."



Note

A Note is just that: a note. Usually a note provides information related to the topic under discussion but not essential to it for the purposes of working through that topic. A Note says, essentially, "Here's an interesting point about the topic or something you might want to keep in mind."



Cross-Reference

The Cross-Reference icon refers you to other chapters that cover a point just mentioned in the text in more detail. You'll also sometimes find cross-references in parentheses.

How This Book Is Organized

I've divided this book into six sections. After introducing you to setting-up your system, it takes a look at each of the types of activities you will use your Media Center PC for: TV, music, photo viewing, and getting content from the Internet. The following sections describe briefly how the book is organized.

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Part I: Introduction and Setup

This part will help you understand the benefits of using Media Center, and will guide you through planning how to incorporate a Media Center PC as the hub of your entertainment system. It will show you how to set up Media Center and will also introduce you to the operating system and applications that come with it.

Part II: Media Center Edition PCs and Devices

Hardware and devices that you will connect to your Media Center PC are covered in this part of the book. In addition to examining the best type of PC configurations, it also looks at displays, audio devices, and networking.

Part III: Watching and Recording TV: Playing and Burning DVDs

This part of the book explores TV viewing and recording. It shows you how to use the program guide used by Media Center to schedule recordings and even how to make DVDs of your recorded shows.

Part IV: Music and Radio

Listening to music and radio are covering here. In particular this part will show you how Media Center works with Windows Media Player to manage music files and create playlists. It will also show how you can listen to radio using your PC.

Part V: Viewing Photos and Home Videos

This section takes a look at how to view and manage your photo library using Media Center. It also looks at how to create slide shows and add music to them.

Part VI: Expanding Media Center

The book concludes with chapters on how to expand Media Center by adding more programs and using content from the Internet. The last chapter will explore the potential—and limitations—of Media Center PCs.

Part VII: Appendixes

A listing of Media PC vendors plus third-party hardware and software is located in the Appendixes. It also offers a list of additional resources.

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Part I

Introduction and Setup

Chapter 1
Planning to Use a Windows XP Media Center Edition PC

Chapter 2
Setting Up Your Media Center PC

Chapter 3
The Windows XP Media Center Edition Operating System

Chapter 4
Media Center Experiences

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Chapter 1

Planning to Use a Windows XP Media Center Edition PC



A Windows XP Media Center Edition PC is a PC that has been enhanced for home entertainment. Media Center systems are offered complete with all of the hardware and software needed for viewing and recording TV programs, DVDs, personal videos and pictures, as well as for listening to music and radio.

Unlike traditional computers, Media Center PCs can use a regular TV as the display and can be operated using a supplied remote control. You can also continue to use a computer monitor or have both a computer monitor and a TV connected and in use at the same time.

The operating system, which is only available on Windows XP Media Center Edition PCs, has a TV-centric environment that makes it possible to use your PC in living room, bedroom, or family room settings using only a TV.

This chapter takes a look at how using a Windows XP Media Center Edition PC will change your home entertainment experience—and the entertainment equipment you may currently use. It also takes a look at what equipment and media you will want to keep—and what you will want to put away.

Cross-Reference

Part II of this book examines Media Center PC hardware and devices. Appendix A provides you with a list of Media Center PC manufacturers.

Putting It All in One Box

Where there used to be a home stereo, DVD player, CD player, VHS recorder, TiVo, and a box full of remote controls, you can now replace them all with just one device: a Windows XP Media Center Edition PC (referred to henceforth as a "Media Center PC"). It will enable you to do everything all of the old devices did, but all in one device, with one remote control, and with one common user interface and set of controls. Even better, all of your entertainment content can be accessed easily and can work together. A good example is creating a DVD: Your picture files create the backgrounds in

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menus; your music files can be used for background music; and your home videos or TV programs can be the video. Your Media Center PC will enable you to assemble the project and then burn it to a DVD. It all works together seamlessly.

A Media Center PC will quickly become your TV tuner, video recorder, jukebox, DVD player, slideshow player, and even your radio.

This is largely possible because unlike standard PCs, Media Center PCs are designed to use either a TV or a computer monitor—or both—as their display. How you use and configure your displays is up to you and your lifestyle. Most people will still put it to work as a PC much of the time, so you can have both displays hooked up and that is a great way to use it as well. For home office use it will play all of the TV content on a computer monitor and that is another way people use it.

Are you ready to use a powerful PC only for entertainment? At first I didn't think I was. But consider this—you can get a great Media Center PC for about the same price as a Digital Video Redcorder and a DVD video recorder. Here is an example:

- **Pioneer DVD Recorder with TiVo Service: $999.** You get a DVD player/recorder and also get about 80 hours of hard disk storage for TV recording, and then you can move that content onto a DVD using this device. There is a limited photo storage and music storage function too. Essentially, that's it. You have to pay $12.95 each month for the TiVo service.
- **HP Media Center PC: $999.** You get at least 120 hours of hard disk storage that can be expanded, free TV listings service, DVD recording, plus full access to all Windows functions, system upgrades, access to Internet content, and all of the features that it takes a whole book (such as this one) to chronicle. Without the personal computer functions, it still represents a much greater TV/video/DVD recorder value than any other consumer device on the market. Unlike the preceding device, content can be viewed on a computer monitor in addition to a TV display.

If you are like many people you have been using most of the power of your PC for entertainment, not for general computing, so moving to a Media Center PC also is a good time to think about your personal computing needs.

Photo and video editing, games, music, CD and DVD burning—those are the reasons people are buying PCs today. You can access the Internet, do your accounting and word processing, and check e-mail from the least expensive computer on the market. But you wouldn't buy the least expensive computer if you wanted to burn DVDs.

If you think it through, you may want to put the entertainment power of the PC where it makes the most sense—in your living room or family room. It really makes sense to me, at least; I never really enjoyed sitting in my office listening to music I downloaded, video files I created, or attempting to watch TV with a TV tuner card. The office was the wrong place for the things PCs have become so good at in the entertainment realm.

With home networking and Media Center Extenders, high-speed access to the Internet, and a Media Center PC, you will be able to change the way you think about both your computer and your entertainment center.

Cross-Reference

Chapter 8 explains Media Center Extenders. These are devices that connect to your PC through a home network and enable you to view content from Media Center on a TV.

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Portrait of a Windows Entertainment PC

When you purchase a Media Center PC, it's a good time to review the progress you are making in moving to an all-digital entertainment system. In fact, it is a great time to upgrade your current entertainment equipment and even get rid of some of it. Whether the Media Center PC is in use in your living room, family room, or even your home office, it represents the opportunity to create an amazing digital home entertainment system.

At first glance, a Windows XP Media Center PC looks just like a regular Windows PC—because it is. It is a high-end PC powered by Windows XP that has been expanded to excel at playing media using a special extension of the Windows XP operating system and high-performance components that are optimized for getting media content in and out of the PC.

Most current Windows PCs enable you to play music using Windows Media Player and many other programs designed to play music. The same is true for videos and digital photographs. If your computer has a special TV tuner card you can also view and even record TV programs. Although it is possible to take virtually any PC and add audio and video cards to allow it to play media, such a configuration would lack integration and one consistent user interface across media applications.

Media Center PCs enable you to view and control your entire TV, DVD, music, video, and digital photo collection using Media Center. It keeps all media content in one unified place and you access, control, and view your media content the way it was intended to be viewed—on a TV using a remote control.

Sitting at a desk with a computer monitor, mouse, and keyboard is perfect for word processing and traditional computing applications, but you'll probably agree that it is not nearly as conducive to watching TV or listening to music. If you are like most people you will want your entertainment experience to be in a more comfortable setting, such as a living room or family room. Additionally, PCs don't work that well for viewing by groups of people; it's hard for more than one person to view a computer monitor. TVs remain the most natural way to watch TV and view videos.

Media Center PCs take care of that problem. You can literally set up your Media Center PC in your family room, turn it on, and control it without using a keyboard or a mouse—just a remote control.

Both a PC and an Entertainment Center

The fact that a Media Center PC works well as an entertainment center presents one important question: Do you use it as your PC or do you use it only as an entertainment device?

Because you can hook both a computer monitor and a TV set to the PC simultaneously, you can have both displays in either a home office or the family room. Until now that has been about the only option if you wanted to use a Media Center PC for both entertainment and traditional computing.

Some people may simply continue to use a Media Center PC as their home office PC and occasionally use it for media viewing. Others may take the plunge and locate it in their family room hooked up only to their TV and dedicate it to being their entertainment center. The good news is that it now can be used for both purposes—and in different rooms—at the same time.

Using simple home networking and "Extender" devices, you can solve the "office vs. family room" dilemma. As you learn in the chapters that follow, you can set up your PC in the home office and network it to an inexpensive device that hooks up to your TV and allows access to the complete Media Center experience from anywhere else in your home.

Figure 1-1 shows a typical Media Center PC home configuration using the PC in the office and Media Center Extenders for the family room and bedroom.

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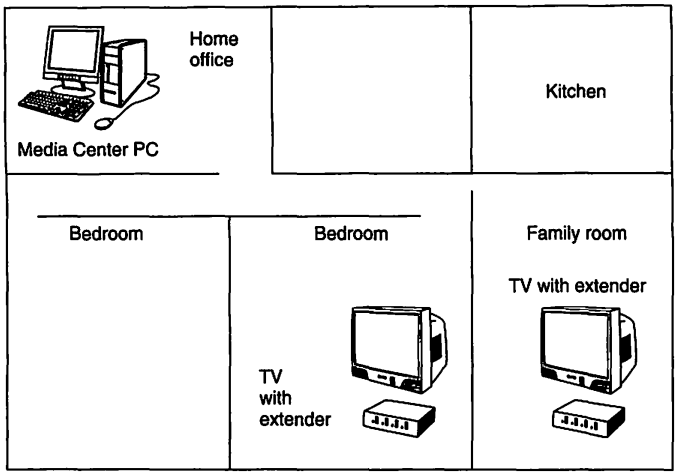


Figure 1-1: An example of a home network using a Media Center PC.

A New Way to Watch and Record TV

Regardless of where you locate the Media Center PC you will want to take advantage of its TV viewing and recording features. All Media Center PCs enable you to connect your PC to the TV source you currently use (cable, satellite, or antenna) and view it on any display connected to your PC.

Once you've connected your Media Center PC to your TV source you can take advantage of its many TV-specific features, including the following:

- Live TV viewing
- Pausing, rewinding, and returning to live TV
- Viewing TV as a Media Center window on your standard Windows XP desktop
- Using a free two-week Program Guide to view TV listings and find information about programs
- Recording live TV or scheduling recordings of TV programs by time, date, and channel, or using the Program Guide to schedule recordings
- Playing back recorded TV programs—even while recording a live TV program
- Watching a live TV show while recording another live TV show if your PC is equipped with dual TV tuners
- Communicating with other people online while using Media Center with Microsoft Messenger

The Media Center PC enables you to use your PC as a TV tuner, recorder, and Program Guide. You can also save your recorded TV programs to DVDs (as shown in Chapter 11). Figure 1-2 shows the My TV screen used in Media Center.

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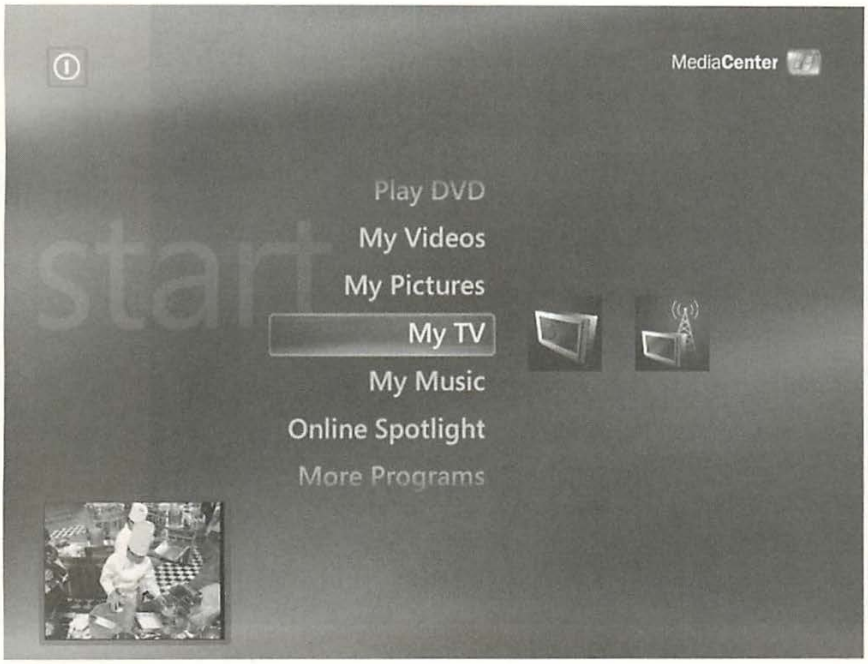


Figure 1-2: Viewing and recording TV with My TV.

Listenting to Music and Radio

Media Center excels at creating a unique audio experience by connecting your Media Center PC to either powered stereo or surround sound speakers. It also allows you to interact with your music visually using the same user interface that you use for TV viewing.

Media Center builds visual screens of your music files and enables you to display and listen to them by artist, album, song, or genre. You can search for music within any of those categories and add music from audio CDs or simply play CDs.

Media Center uses Windows Media Player to build your music library and works with any playlist created in Windows Media Player. You can also download music from online music stores such as Napster and add it to your music library with Media Center.

If you have a Media Center PC with an FM tuner card you can also listen to live FM broadcasts. If you have Internet access, you can listen to Internet radio stations. You can even pause and rewind radio broadcasts! Between broadcast and Internet radio stations, your choice of music sources is virtually unlimited while in Media Center.

One of the nicest features of Music Center is the visualization of the music library. If your files have album art embedded you will be able to view your music collection by album cover. While listening to music you can watch a slideshow of your photo files or use "visualizations" that turn your TV or monitor into a kinetic video synced to your music.

Figure 1-3 shows the My Music menu of Media Center and gives a preview of how it enables you to interact visually with your music library.

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Figure 1-3: Access your music files with My Music.

Viewing Your Video Library

If you have home videos from your analog or digital camcorder, Media Center is a great place for managing them and viewing them. Using the same file system, menus, and controls used throughout Media Center you will be able to treat your video files like any TV program—just point, click, and view.

One of the nice features of working with home videos in Media Center is that you can connect an analog video source such as an analog camcorder or VHS recorder, capture video for display in Media Center, and save it as a file. If you have a digital camcorder it will be best to capture the video using a digital connection. Either way, it is easy to get your home videos into Media Center.

You can also control and view videos directly from your digital camcorder if it is connected to your computer using the IEEE 1394/Firewire connection from your device. This enables you to view your videos without first storing them on your hard drive.

As you will learn as you read more of this book, Media Center is good at displaying information about what you are watching or listening to. While watching a video you can press the Info button on your remote control to display the file information about your video on-screen in the same way you view Program Guide information while watching a TV program.

Figure 1-4 shows a video library in My Video.

Watching a DVD

Media Center also enables you to play DVDs in the same way as any other media content. Although it uses the same controls for transport it also features all the standard controls used on any DVD player,

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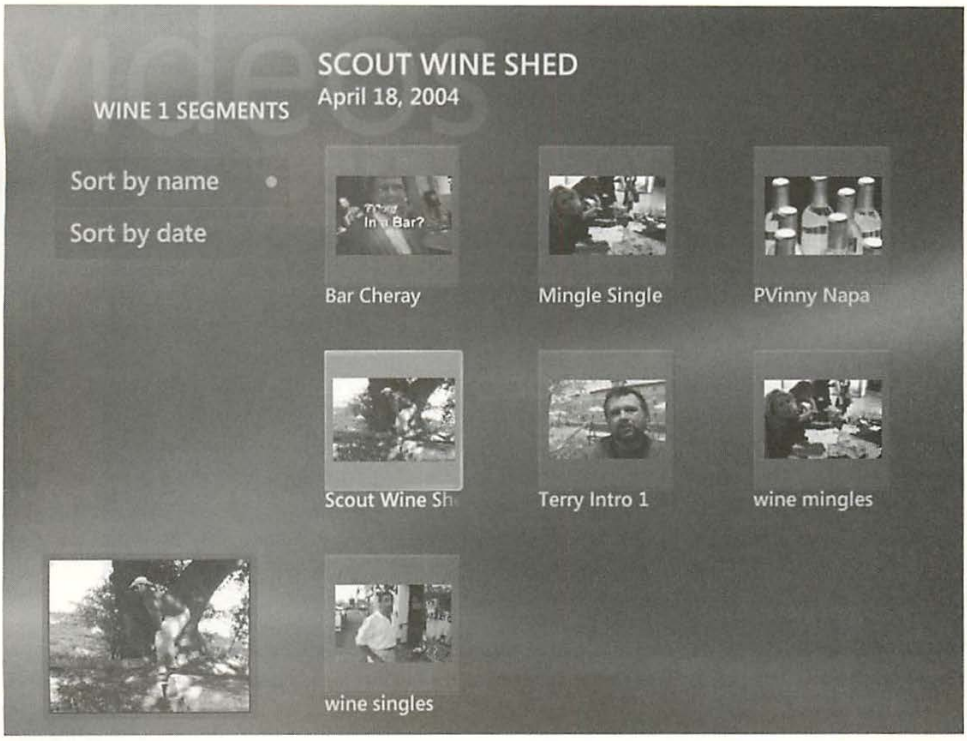


Figure 1-4: View your video files in My Video.

including accessing the DVD menu and special features. When you insert a DVD into your Media Center PC, the DVD will automatically begin playing in Media Center.

Chapter 11 looks at both playing DVDs and recording your own content—including recorded TV programs—onto DVDs.

Getting Other Content Using Online Spotlight

If your Media Center PC is connected to the Internet you will be able to access special Media Center–formatted content from Online Spotlight. This area of Media Center is where you can download movies for rent or purchase, buy music, find Internet radio stations, view news and weather, and download additional programs such as games.

Media Center does not include a Web browser, but you can return to Windows XP for general Web browsing at any time. Most Web sites are designed for computer monitor displays—not TV displays. As a TV-centric environment Media Center links only to Web content that has been designed to function and be viewed like all other Media Center programs. Those Web sites are accessed using Online Spotlight.

Figure 1-5 shows a typical Online Spotlight screen linking you to a variety of Internet-based content.

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Figure 1-5: Media Center connects to Online Spotlight on the Internet for additional content.

Adding More Programs

Since the release of Media Center, a large number of companies have begun developing additional programs that integrate into the TV-centric environment of Media Center. Ranging from games to DVD recording programs, the More Programs area is where you access additional programs you have installed.

The two most recently accessed programs are added to the Start Screen of Media Center, and the More Programs button allows you launch and find all additional programs that you have added. Chapter 18 looks at where to find more programs and how to install them.

Figure 1-6 shows the More Programs screen.

Going Digital: The Main Ingredients

When you are familiar with the features and benefits of Media Center, it's a good time to begin thinking about all of the media content and devices you currently use in your home. Getting a Media Center PC will change the way you experience entertainment. With it you leave the "analog" world of yesteryear and go all digital.

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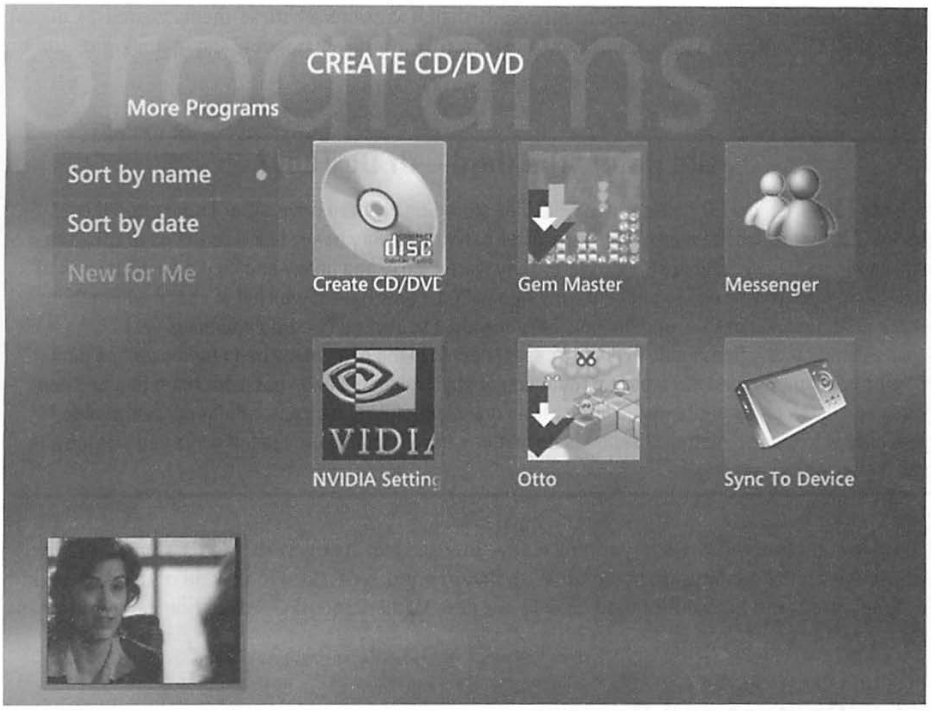


Figure 1-6: Launch third-party Media Center applications from the More Programs screen.

Like most people, you probably have a mix of old and new TVs, stereos, video recorders, CD players, and DVD players. You probably also have a ton of audio CDs, cassettes, VHS tapes, DVDs, and boxes of photographs and home videos. No doubt you've watched how much of your favorite media has made the move from analog to digital.

Examples of analog media include the following:

- Film- and print-based photographs and slides
- VHS videotapes
- 8mm or Super8 home movies
- Vinyl albums
- Cassette audiotapes
- Over-the-air TV broadcasts
- Cable that does not use a set-top box

Although many of these examples are now out of date, you may have lots of good music, video, and pictures in those formats. Converting as many of those media in old formats as possible to digital formats is important because they will last longer and take up a lot less physical space than they

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do in their analogs forms. Most importantly, with digital versions of these media stored as digital files on your PC, you can manage and control them in ways never possible using analog media or devices.

Old Habits Die Hard—Or Do They?

I recently converted my CD collection to MP3 files stored on my hard drive. After I converted them I sold the CDs themselves to a used CD store. After carrying 18 very heavy boxes to the used CD store, I really understood how "physical" CDs were. They were clunky and heavy and held a small amount of music compared to where they ended up: my Apple iPod. I now have a wall full of space where there were once thousands of CDs, and the musical equivalent to several hundred pounds of CDs (admittedly much of it from being in plastic cases) now fit in the palm of my hand (and on a few data DVDs for backup). Beyond the amazing reduction of physical media and space, for the first time I can access and listen to my entire music library from one place. All my music is cataloged, searchable, and available to me in a matter of seconds no matter where I want to go. Kind of gives you incentive to go all digital, eh?

This book assumes that what you are really interested in using your Media Center PC for is entertainment first and computing second. With that in mind, let's take a look at all of the devices and media that you should be examining to create your new Media Center PC–based home entertainment system.

Analog Content and Devices

If you want to keep the content from analog media you will need to keep the equipment that can play it—at least during the process of converting it to digital format. Keep that in mind as you are planning your digital entertainment system and you will save yourself a lot of money replacing equipment or hiring a service to do it for you at a later date.

Following is a breakdown of analog content and analog devices you will want to keep and others that you can put away. Keep in mind that you can certainly keep old media and equipment—"put away" means simply that you probably won't use or need the media or equipment once you get your new Media Center PC system in place.

- **Audio Cassettes and Vinyl Albums:** If you never converted them to CDs or digital files on your computer, now is a good time to do so. Keep them handy during that period and longer if you are nostalgic or a collector, but overall if you want to listen to them, convert them to digital files and then put them away for safekeeping.
- **Cassette Decks and Turntables:** Again, for sentimental value or pure nostalgia you may want to keep your turntable or cassette deck. You will also want to keep them during your conversion because you will need them to capture the audio from your albums or cassettes. As an ongoing audio source in a digital system, however, they will not be needed.
- **Home Videotapes and Movies**: Regardless of their format—8mm, Super8, VHS, VHS-C, Digit8, MiniDV, or S-VHS—keep your original home movies for converting and archiving

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them as original source material. Music from CDs, for example, can usually be replaced, but that is not the case with home movies and videos. Get them to digital formats as soon as possible and then store them in a safe, dry place with a stable temperature. Computers sometimes crash and backups get lost; for these reasons and more it's always good to keep the originals.

- **Photographic Prints, Slides, and Negatives:** If you have a lot of old photos it will probably take you a long time to convert them into digital files such as JPEGs for storage on your PC. It's a good idea to convert them because once you do you can use them for media projects and you will have a digital backup of precious memories. After they are in digital form you can share them with friends and family via posting them on the Internet, sending them via e-mail, or sending CD-ROMs via snail mail. You can do the job yourself with a good scanner or send them off to the local photo service for conversion.
- **Stereo Systems:** As good as your home stereo may be, unless you plan to use it as a powered set of speakers for your Media Center PC, it may be good to think about putting it away. Home stereos are old technologies that are not capable of easily being controlled by your new Media Center PC–based system. One thing that home stereos are good for is listening to local radio (and you may keep it just for that). It may be better to add a TV tuner card that features an FM tuner to your Media Center PC, which will enable you to use your Media Center PC to listen to stations in your area that may not be available through Internet radio.
- **VCRs:** After converting any home videos or favorite tapes, you will have little use for VHS recording or playing. If you are like most people you probably have put your VHS recorder away or thrown it out. There will be times when you will come across a VHS video, such as home movies that you want or an old video that is only available on VHS, and you will be glad you didn't throw your deck out. This is also true if you have friends or family who can view your videos only on their VHS deck—you will need to create VHS tapes of your digital movies for their viewing.

After you sort out what media you want to include long-term, be sure to keep the devices that play them handy—at least for a while. I no longer have an audio CD player, DVD player, or even a home stereo in use in my home. I keep them in storage but I just haven't had to use them for a long time—but that doesn't mean I never will. PCs crash and you change PCs now and then. For those times I am glad all my old equipment is at hand.

Digital Media and Devices

After taking inventory of your analog world you also need to take a look at what digital media and devices you have available. Much of it may currently be on your PC or in the form of media delivered from the Internet or converted from your analog sources.

- **Audio CD Players:** Your PC plays CDs and it plays just about every other audio format possible. That makes it a better device overall than a dedicated CD player in your entertainment system. If you have a CD player that can play MP3 files, it will be more useful in the near-term. Because your computer has a CD-ROM drive that can play audio CDs and

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enables you to store them on your hard drive, an audio CD player is not required for your new system.

- **Audio CDs:** You will want to keep your audio CDs around if you have not yet converted those to digital files such as MP3 or if your car has a standard CD player without MP3 capacity. You'll also want to keep them if you have other players at home or work that can only play audio CDs.
- **Audio and MP3 Files:** If you have been converting, downloading, and buying music in MP3 and WMA file formats you are well on your way to your digital home entertainment system. At this point you want to think about how to move all of those files to one central place. That place will be your Media Center PC, which will act as your music server, CD player, and stereo system. If you have a DVD recorder on your current PC, it's good practice to archive and back up your music files to data DVDs. This also makes it easy to move them to your new Media Center PC.
- **Digital Photos:** Just as with music files, if you have been converting your old photos to digital files using a scanner or digital photo service you are well on your way in the photo department of your new system. Get into the practice of backing up those important files on CD-ROM or DVD.
- **Digital Videotapes:** Digital videotapes are actually a good place to keep videos unless you have a lot of hard drive space for storing them. Right now video files are huge and can consume a hard drive pretty fast. Unlike TV programs or other replaceable content, you wouldn't want to store your home videos in a highly compressed, low-quality format. As a rule, you capture home videos at high quality for editing or short-term storage while you are working with them and then "send" the edited file back to digital videotape. With your Media Center PC you will be able to move your home videos to DVD for storage, but even then you need to keep your originals—at least where they are easy to get at.
- **DVD Players:** It's not that DVD players are old technology; they just aren't as good as using your Media Center PC. Using your PC to play DVDs has a number of advantages that will be explored throughout this book. Controlling a DVD from your system and the ability to access special PC-only content found on many DVDs are the best reasons to put your DVD player in the closet and use your Media Center PC instead.
- **DVDs:** At least for now, keep your DVDs out and in use. Because movies on DVDs are copy protected, you won't easily (or legally) be able to move them to your computer. Even if you can copy them, the movies take up an enormous amount of hard drive space—usually at least 5GB each. DVDs offer high quality, low cost, are easy to store, and are totally compatible and playable with your Media Center PC.
- **TV Programming:** TV shows come to you in a number of ways. For the most part, your Media Center PC won't care too much where the shows come from or whether they are analog or digital. That is true today in a world where most all of our TV shows are analog—even if they are delivered to you on a digital system such as digital cable or one of the two major satellite systems. As time goes by, high definition television (HDTV), which is digital and of very high quality, will become more available and will be an option for you when upgrading your TV or your cable/satellite service. For the next few years, though,

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think of TV as analog signals that are delivered or stored as digital files on your Media Center PC.

- **Digital Cable or Satellite Box:** If you subscribe to digital cable or a satellite service such as Dish or DirecTV you will continue to need a cable set-top box or satellite decoder box. In your new Media Center PC system, your PC will take control of them for you and you will connect them to, and view the programming from, your PC.
- **PVRs such as TiVo or Replay:** As handy as personal video recorders (PVRs) are, the PC is just better at being a video recorder. PCs offer far more storage and the storage is easily expandable. Media Center PCs also enable you to store TV programs to a DVD for archiving or playing elsewhere. TiVo and Replay have a monthly service fee to get TV listings required to program recordings; Media Center PCs offer TV listings at no charge. Once you use your Media Center PC you will probably find the TiVo or Replay gathering dust on the shelf.
- **Music and Movies from the Internet:** Music and movies are being made widely available for rent or purchase from sources on the Internet. The Internet is a great source for entertainment content—but generally only if you have high-speed Internet access such as DSL or broadband cable service in your home. Recently, the music industry began making it possible to legally buy individual music tracks as MP3s for around a dollar using services such as Napster 2.0 (which you can use with your Media Center PC; see Chapter 19). This is the shape of things to come and will be the model for movie rentals in the future.
- **Radio Services:** Radio stations are now being broadcast over the Internet and you can use your Media Center PC to listen to them with great ease and control. Your system, if equipped with an FM tuner, will also be capable of playing local off-the-air FM radio stations controlled by your PC like any other audio source. The ability to use your PC as a radio really completes the utility of the PC as a replacement for home stereos.

Summary

A Media Center PC enables you to use your PC as your entertainment center. You can connect your Media Center PC to a compute monitor, TV, or both, and use it to view TV, DVDs, home videos, digital photos, and to listen to music and radio. All of that content is controlled the same way whether you're using a keyboard, mouse, or remote control, and all use a TV-centric interface.

By converting all of your old "analog" music, video, and photography to digital file formats, you can store them all on your Media Center PC. Once there, you can use them as an ongoing part of your digital entertainment experience.

The process of converting analog content to digital format requires that you have the devices that play them in their analog form. Hold on to your old cassette deck, VCR, analog camcorder, and turntable at least until you are sure that you have successfully transferred all of your analog media to your Media Center PC.

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Chapter 2

Setting Up Your Media Center PC



One of the biggest challenges many people face when considering buying a Media Center PC is where it will be used in the home. Just about any Media Center PC on the market is a top-of-the-line PC that's more than capable of any office-computing task. As discussed in Chapter 1, the audio and video powers of Media Center PCs also make them one of the most powerful home entertainment devices on the market today.

Used as an entertainment center in the family room or for powering the entertainment center from the home office, Media Center PCs can do so much that you will want to reconfigure your current home entertainment system. You will want to keep parts of your current entertainment system and some you will want to remove. This chapter looks at how to build a home entertainment center with the Media Center PC at the heart of it.

Choosing the Right Media Center PC Form Factor

You will need to start with the purchase of a Media Center PC.

One of the first questions most people ask when thinking about purchasing a Media Center PC is "Why can't I just add Media Center to my current PC?" As you learn in the next chapter, Media Center PCs are a combination of hardware, software, and operating system that all work together as a configured system. The system is only sold as a Media Center PC and unfortunately is not available as an upgrade to your current computer.

If you have yet to purchase one, a good way to start is to read this book and understand all of the features and possibilities that such a purchase represents. Understanding the functions and knowing where you plan to use it in your home will help you get the right model.

For example, if you primarily want to use your Media Center PC for picture viewing and music, you can purchase a model with a smaller hard drive. If you plan to use your Media Center PC for recording tons of TV shows and editing home videos you will want to get a model with TV tuner cards and the largest hard drive possible—and maybe even one where you can add additional hard drives.

Media Center PCs come nicely equipped with just about everything you will need except a display. In addition to deciding what type of display you will use (see the nearby sidebar), you also a have choice of what size and shape (form factor) of Media Center PC you want. As a component in your

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entertainment center it will be a highly visible device in your home. Media Center PCs come in different shapes to match your lifestyle.

To TV or not to TV?

Many retail sellers of Media Center PCs such as Best Buy and Circuit City bundle 15" or 17" LCD displays with Media Center PCs. I am always amazed at that bundle; the magic and dazzle of a Media Center PC is that you can use it with a TV, but I have yet to see one promoted that way at a retail outlet. A good friend of mine wanted to check one out and he went to several retailers including CompUSA. Not *one* had their Media Center PCs hooked up to a TV, and none would do that for him. He finally hunted down a store that would make the connection for him and saw a Media Center PC hooked up to a 42" plasma TV. He bought the computer—and the 42" plasma TV.

If you plan to use your Media Center PC in your living room or family room you may want to take a pass on the LCD display bundle. If you are in the market for a new TV, ask if the retailer can give you an equally good "bundle" deal with a TV in place of the LCD display.

Media Center PCs come in five basic form factors. Each has its advantages for different locations and applications.

Tower

Towers are just what their name implies: They are large, vertically oriented oblong boxes designed originally as office equipment and for office use. They are easily expanded and are low-cost. Most Media Center PCs are being sold as vertical towers like most PCs sold in retail outlets. The reason for this is that it's cheaper and easier for manufacturers to take an existing PC and add on the components that make it meet Microsoft's Media Center PC requirements than it is to create new form factor cases.

The only problem with the tower form factor is that it looks like an office PC; it's not really a machine that looks like it belongs in a living room. Additionally, the vertical shape is unfriendly to most all entertainment center shelving and furniture. If you take pride in the appearance of your entertainment center you will need to consider if this form factor is right for you.

Manufacturers such as Sony and Hewlett-Packard have recognized this issue and have made cosmetic upgrades to Media Center PCs. The Hewlett-Packard line, for example, offers its Media Center PCs with a glossy black and chrome front panel with all connectors available from the front but hidden by doors when not being used (see Figure 2-1). It's a clean, polished look, but the vertical form factor is still not perfect for most entertainment centers.

If you plan to use your Media Center PC in an office or a location that can work with a tower, you will find this form factor easy to find and a great value. Because these machines share the casing and parts with their regular PC lines, larger manufacturers can produce them at a low cost and service them easily. They are also easily upgraded and expanded, making it simple to add hard drives and expansion cards.

For overall value, choice of retailers, and expansion options, the tower can't be beat—if you can live with it in your entertainment center.

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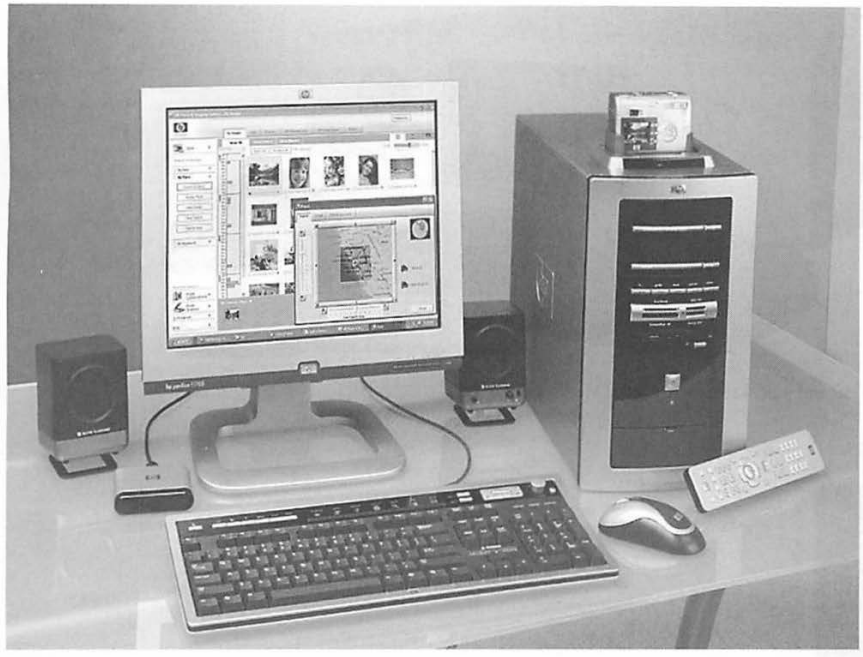


Figure 2-1: Hewlett-Packard's tower form factor Media Center PC.

Desktop/Rack Mount

A form factor a bit friendlier to home entertainment systems is the desktop form factor, sometimes also referred to as a *rack mount* form factor. It's about the same size as a tower, but it sits horizontally rather than vertically. In many cases with regular PCs, the monitor sits on top of a desktop form factor PC as shown in Figure 2-2 showing a Gateway desktop form factor PC. The overall look of most desktop Media Center PCs is that of a rack stereo unit; it fits well in most entertainment centers (assuming no monitor sitting atop it) and has all of the expansion potential of the tower units.

ABS, CyberPower Inc., iBuyPower Inc., Mind, Tagar, and ZT Group offer Media Center PCs in this form factor. ViewSonic makes its Media Center PCs work as either a tower or a desktop (see Figure 2-3).

Note

Most desktop/rack mount form factor Media Center PCs are available only through mail-order companies, so it's hard to see one before you purchase it.

The models available do a great job looking good as a part of your home entertainment center. The fit and finish make them look like a high-end stereo unit. They come in black or silver and the front panels are devoid of doors and connectors (they are usually hidden behind the front panel).

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Figure 2-2: Gateway's desktop form factor Media Center PC.



Figure 2-3: ViewSonic's Media Center PC can be positioned as a tower or horizontally to fit in entertainment centers.

Overall, desktop or rack mount form factors are good choices for a polished, highly visible Media Center PC that combines the full power of a Media Center PC with good looks.

Cube

One of the most interesting form factors for Media Center PCs is the cube. It's very similar in appearance to a mini shelf system stereo. It's a machine that can fit just about anywhere due to its small size. (See Figure 2-4.)

The smaller size does limit the cube form factor from being as expandable as the tower or desktop. This means you have only one optical drive (such as a DVD-R or CD-RW) rather than the two usually found on towers and desktops, and limited room for extra hard drives and add-on cards. Right now this

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Figure 2-4: ZT Group's cube form factor Media Center PC.

form factor is available only from a small number of mail-order companies, making it hard to view prior to purchase. Appendix A lists such mail-order companies, and you may find that some of the independent computer retailers in your area custom configure cube systems that use the same form factor.

When size and appearance are the key features you want, the cube may be the right solution for you. High prices and limited expansion are issues to seriously consider before purchasing.

Laptop

Media Center PCs now come in a laptop form factor. Laptops from manufacturers such as Hewlett-Packard and Toshiba pack all of the features of a desktop Media Center PC into a large laptop. (See Figure 2-5.) They feature the video in and out connections required for all Media Center PCs and can be controlled by a remote control.

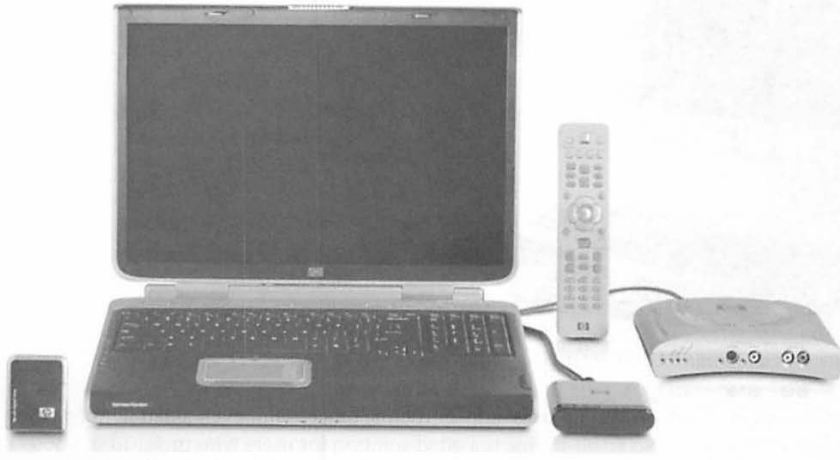


Figure 2-5: Hewlett-Packard's laptop Media Center PC.

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Media Center PC laptops tend to be large so they can feature a large LCD display. Current models feature a 15″ standard display or a 17″ widescreen display ideal for viewing DVDs and widescreen movies. They are also heavy, weighing around 8 to 9 pounds.

Laptops offer full Media Center PC performance including DVD recorder drives, video inputs and outputs, and the same operating system shared by all MCP PCs. They offer portable entertainment and a great deal of flexibility for placement in the house or on the go.

Note

Portability comes at a price: Media Center PC laptops are at the high range price-wise and can't match regular PCs on expandability forefronts.

All-In-One

The concept of an "all-in-one" PC has been around for a while. Starting in the late 1980s with the original Compaq portable computer, the first Macintosh computers, and in a variety of recent systems from Sony VAIO, the "all-in-one" form factor is now being applied to Media Center PCs by companies such as Gateway.

By putting all of the computer components, including a DVD drive, into the same housing as the LCD monitor, you have a Media Center PC in one sleek unit. Figure 2-6 shows Gateway's all-in-one model.



Figure 2-6: Gateway's all-in-one Media Center PC.

This is a good configuration for certain uses—dorm rooms, offices, and even small living spaces. It's still possible to connect a TV, so an all-in-one is a good solution for users who prefer to use both a computer monitor and a TV at the same time.

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Note

Although space-saving and stylish, the all-in-one does limit your monitor choice to the one contained in the PC. The displays also tend to be small—17″, for example. If you plan to expand your system, the all-in-one design will mean adding external devices for expansion—something to consider when trying to save space.

Media Center PC Components

Figure 2-7 illustrates what comes "in the box" of a typical system when you purchase a Media Center PC.

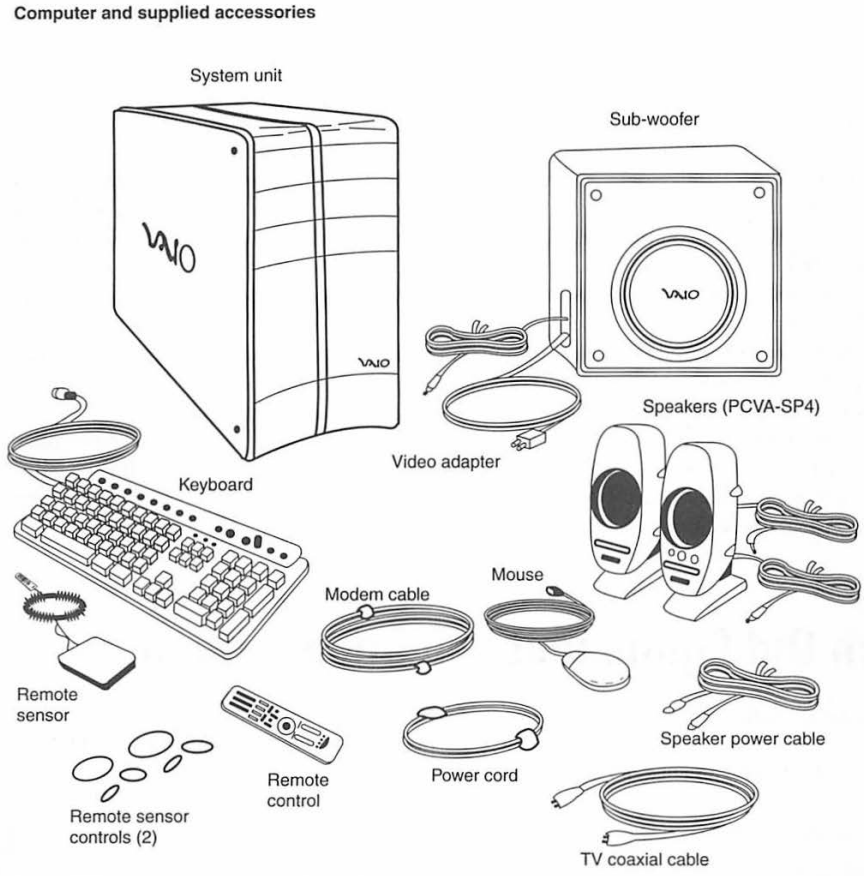


Figure 2-7: What to expect in the box when you purchase a typical Media Center PC.

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When you open the box of your new Media Center PC, expect to find the following:

- CPU (the computer)
- Keyboard and mouse
- Power cords for the computer and speakers
- Media Center remote control
- Media Center remote sensors
- Audio and video cables
- Speakers (if your system came with them)
- Manual and system recovery discs

You will find the computer, power cord, keyboard, and mouse in any computer you purchase. If your system comes with powered speakers, there will be a power cord and cables to connect them to the computer.

In addition to those basic items you will find an MCE Remote Control and (usually) batteries for it. There will also be what is referred to as a "remote sensor." This is the device that receives the signals from the remote control. Unlike devices you currently have—where the sensor for communication with a remote control is built into the device—Media Center PCs wisely use a remote sensor that can be positioned away from the computer. This enables you to place it anywhere you like in view of your remote control and to put your Media Center PC in a cabinet or out of sight.

You will also find remote sensors to control your cable or satellite set-top box. These are usually very small RF devices that you place close to, or attach to, your set-top box. They are the devices that change channels. They perform the exact same function as the remote control you currently use. In a Media Center PC system, your computer will control channel changing on your set-top box using the remote sensor controller. Your system may come with either one or two such devices.

Finally, if your system is equipped with a single or dual TV tuner card, there may be some basic video connection cables and adapters. Typically you will find a coaxial cable for connecting the video source (set-top box or antenna) to your Media Center PC. There may also be an adapter for connecting an S-Video connector to a composite video source.

Which Old Equipment You Should Keep

After you have a Media Center PC, you will want take advantage of some of the equipment you currently have. The following sections discuss the items that you need to keep for your Media Center PC to power your entertainment center.

Cross-Reference

Chapter 10 is devoted to connecting your display to your Media Center PC.

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Computer Monitor

If you plan to use your computer monitor by itself or with a TV as a display for your Media Center PC, you will want to make sure that it is large enough for entertainment viewing.

Most computer monitors, whether tube or LCD flat panels, will work perfectly as a display for Media Center. This is an item you should keep and use as you always have.

TV

If you have not yet purchased a Media Center PC it is good to think about your TV now. If you have a good quality TV, it should be capable of being your primary display. All Media Center PCs have video-out ports with S-Video and composite video connections that allow them to connect to a TV.

Following are three tips when considering what display to use with your Media Center PC:

- You can use composite video output, but if your TV has an S-Video input it is strongly recommended that you use it.
- If the TV you have doesn't fit the profile of one that will work well with a Media Center PC, you can use your computer monitor until you upgrade to a new TV.
- If you purchase a TV that can function as a computer monitor, I suggest that you connect it to your Media Center PC as a monitor using the 15-pin monitor connector rather than using the composite or S-Video connectors. The quality of the image will be better this way.

CATHODE-RAY-DIODE (CRD) TVS

When dealing with a standard TV, your current TV may be perfectly good to use. Start by looking at the back of your TV to identify what type of video connections it has using the examples shown in Figure 2-8.

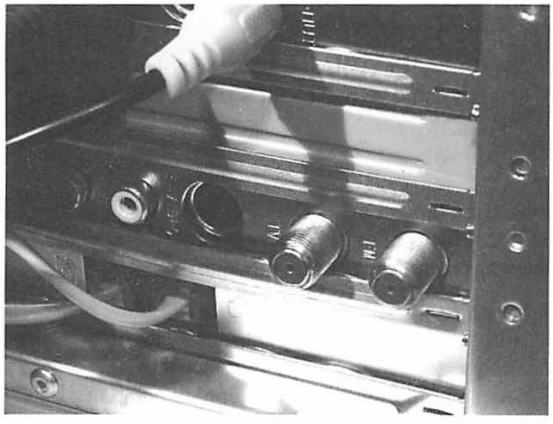


Figure 2-8: S-Video and coaxial antenna connection on the TV tuner card.

As a starting point you should check your TV to make sure it has more than the coaxial antenna connection standard on all TVs. If it has either a composite or S-Video connector you will be able to connect your TV to your Media Center PC. You will not be able to use a TV that only has a coaxial antenna connection.

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I tested my Media Center PC on a number of different TV sets. Although much will depend on the quality of your particular set, following is what I have found to be a set of guidelines to determine if your TV will work well when connected to your Media Center PC.

The only way to know how your TV will work is to hook it up to a Media Center PC and see how you like the picture. To help with planning, Table 2-1 provides some tips to how your current TV may fare.

Table 2-1 TV Legibility Guidelines

TV Size	*Type*	*Connector*	*Results*
13″	Tube	Composite or S-Video	Not recommended. Text too small.
15″	LCD	S-Video	Small type, but text is sharp enough to be legible.
20″	Tube	Composite or S-Video	Acceptable. Text is small.
27″	Tube	Composite or S-Video	Acceptable. Text is legible.
30″	Tube	Composite or S-Video	Good. Text very legible.
36″	Projection	Composite or S-Video	May be too soft in focus.

It would be nice to say that there is a certain size TV that is large enough to work, but as you can see from the table, a large TV such as a projection unit may not be a good match and a 20″ tube TV with an S-VHS connection is just barely good enough to use. Microsoft has done an excellent job of creating a user interface that can be read on most TVs, but even with good eyes and a sharp picture on your TV, the text on the screen can be hard to read on sets under 20″.

Tube TVs 27″ or larger will work well. Projection TVs, regardless of size, may have a bit less sharp of a picture and that will affect text on the screen.

LCD TVS

Unlike CRD tube TVs, LCD TVs display text quite sharply; therefore, consideration of LCD TV size is more a matter of how far you are from the TV and how good your eyesight is than it is the size of the TV itself.

Following are two major categories of LCD TV displays:

- **LCD TV with Computer Connections:** Even though many LCD TVs look like a flat-panel computer monitor, not all have the ability or the connectors to act as computer monitors. Those that do, however, are every bit as capable as any computer monitor.
- **LCD TV without Computer Connections:** I have a Media Center Extender in my bedroom and recently replaced my 20″ tube TV with a 17″ LCD TV that I got for a super price. Media Center Extenders only have an S-Video connector because they are designed to be connected to a TV and not a 15-pin VGA connector, so an LCD TV without computer connections was the perfect answer.

HIGH-END TVS

Many people use the purchase of a Media Center PC as a time to upgrade their TV to a new display such as an HDTV monitor or plasma display. Some Media Center PC models have a digital-out video

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port that can be connected to newer HDTV monitors. Some computer companies are bundling Media Center PCs with plasma displays and sellers such as Gateway have become the largest sellers of plasma TVs as a result.

The two major types of high-end TVs are

- **Plasma TVs:** Most offer at least 640 × 480 VGA connections to a computer and the image is as good as any computer monitor. Plasma TVs that deliver HDTV usually have connections that allow them to act like a multi-sync computer monitor.
- **Enhanced Definition TVs and High Definition TVs:** There is a new generation of tube TVs that look like regular TV sets, but they have a much higher resolution that makes them good for use as a computer monitor. Check to see if they have connections for acting as a computer monitor and what resolutions they support.

Stereos and Speakers

Media Center PCs are usually sold with a set of powered speakers ranging from a simple pair of stereo speakers to a full surround sound set with subwoofer. (See Figure 2-9.) Recently (to keep the price

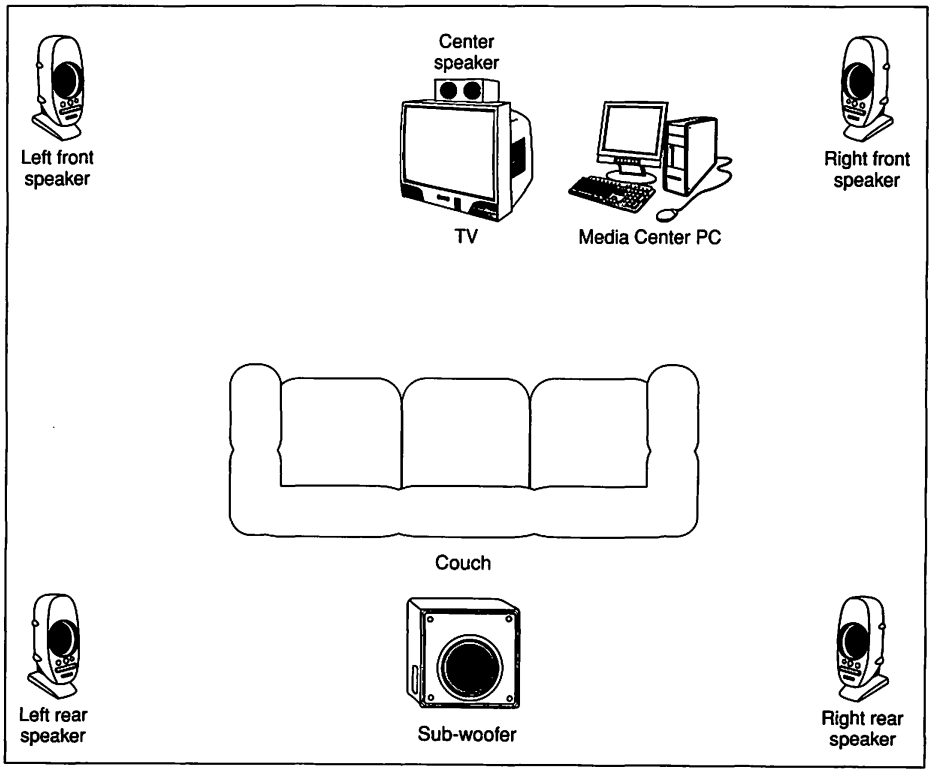


Figure 2-9: Typical surround sound system speaker placement.

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down) models have become available without speakers. This may be good news if you already have a good set of speakers and don't need an additional set.

The choice of amplifier and speakers for your system is a personal preference. If your computer comes with powered speakers, give them a try. Most systems have speaker systems that are optimized for TV and DVD viewing and usually are very good. The best systems are designed for surround sound and have a center speaker, subwoofer, and four satellite speakers.

The advantage of the speaker system that comes with your computer is that it is controlled from your computer. If you use your own stereo, for example, the tasks of turning it on and making volume adjustments require an extra remote control.

At this point, some key questions to ask yourself about using your existing stereo system are

- Is your system energy efficient in that it can go into a standby mode if left on at all times?
- Do you have a surround sound system that can take advantage of DVD surround soundtracks?
- Does using your current stereo add complexity to your home entertainment system?

If you love your current system, keep it and continue to enjoy it. If you can buy a Media Center PC that doesn't come with a powered speaker system for less money, save yourself the money and purchase it that way.

If you have been considering upgrading your stereo or speakers and your Media Center PC comes equipped with a set, give those a serious try.

Satellite or Cable System Set-Top Box

If you subscribe to cable or satellite services you will continue to need the set-top box that comes with your service.

Right now you control your set-top box directly using a remote control. Once you set up your system, your Media Center PC will actually control the set-top box and you will use the remote control that comes with your Media Center PC.

Cross-Reference

Chapter 6 goes into the details of how to have your computer take control of your set-top box. For now, it's something you will keep in place and continue to need as a part of your system.

Equipment You Will Want to Get

In addition to the equipment you already have and use, to get the most from your Media Center PC you may need to add some devices. The following sections detail adding a home network, wireless keyboard and mouse, and maybe a terrific new TV to complete your Media Center PC entertainment system.

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Home Network Equipment

Planning your home network is something you should consider doing prior to installing your Media Center PC. When you set up your Media Center PC the first time you will be choosing settings for networking and access to the Internet. This will enable you to configure your system correctly from the beginning, which actually is easier than modifying it at a later date. (See Figure 2-10.)

If you decide to go with a wired network you will need to create an access point where you will be placing your Media Center PC. If you will be placing your PC in the living room, family room, or

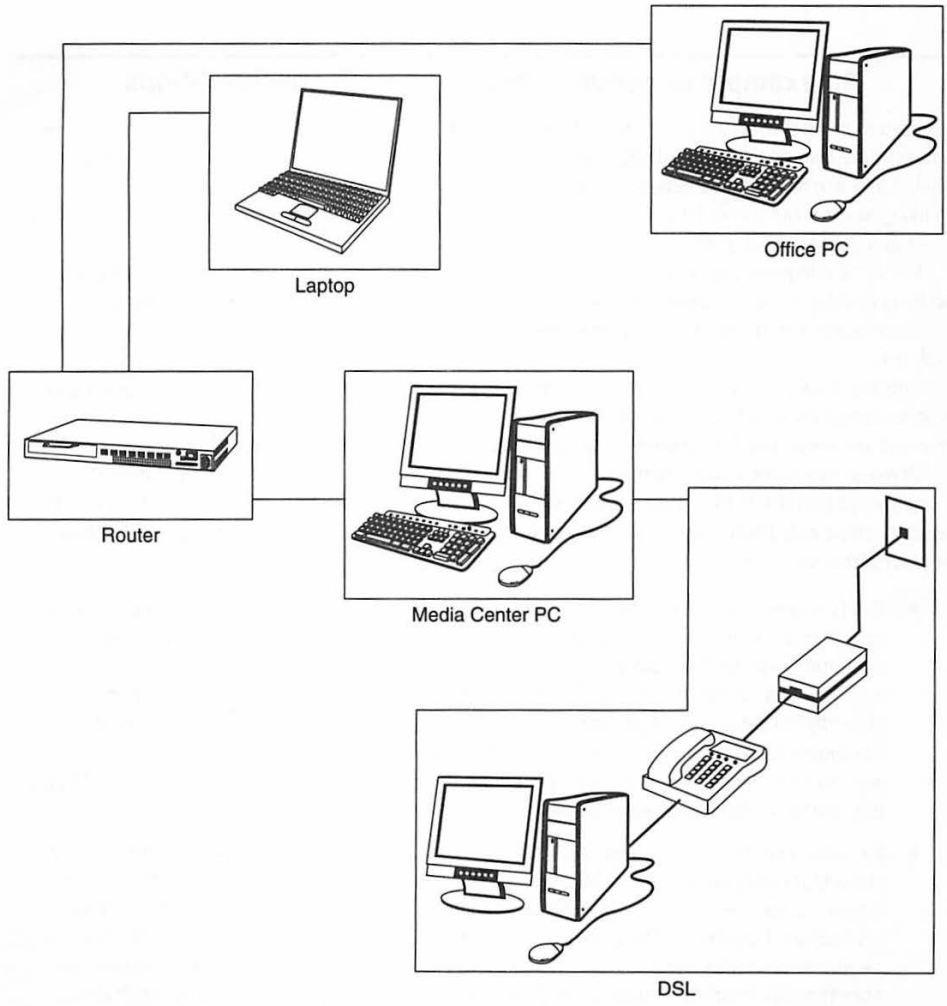


Figure 2-10: A Media Center PC as the host of your wireless network.

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bedroom you may need to add a connection there for the first time. You should also be sure that you have a phone jack or connection to your antenna or cable/satellite system.

Cross-Reference

Chapter 8 provides you with thoughts on how to network your Media Center PC, and you may want to read that chapter prior to buying any networking equipment. For now, I would like to share some thinking based upon my use of a Media Center PC in my home (see the following sidebar).

An example of network reconfiguration considerations

It's hard to make the jump from thinking of a PC as an office machine to a home entertainment device. For example, when I got my Media Center PC and put it in my living room I intuitively thought that I should add it to my wireless network as an additional device connected to my home office PC. I was thinking of it the same way I thought of networking my laptop to my desktop computer.

That didn't work out at all.

My office computer was connected to a DSL service. When I started my home network I began with my desktop computer being the main device (the base station) and connected DSL and a network router to it. It had all the important files and was calling the shots in managing my home network.

With my Media Center PC wirelessly connected to that network, it had access to the Internet and files stored on my desktop and laptop. When I began to access music and video downloads from the Internet and play video files stored on my other computers, things fell apart immediately.

Wireless networks, even with the new "G" standard, are not 100 percent reliable and they also don't always perform at their stated rating. Wireless signals sometimes drop to really slow rates and result in stops and glitches when listening to music from the Internet or other computers. I had two solutions from which to choose:

- The first option was to create a fast and reliable home network using a wired network. Wired networks are fully capable of delivering the Internet and media files to any computer at an acceptable speed. They use the Ethernet ports of your computers and move data at 100 mps—just about right for media. The drawback is that you have to have a home that is "friendly" to a wired solution. I live in an apartment and can't run wires through walls or basements/ceilings without resulting in some expensive repairs when I move. I also didn't want to have cables running around baseboards and through hallways. Considering all of that I decided to rethink the wireless solution.
- The second option was to make the Media Center PC the host of the network and have it be the place that connects directly to DSL and stores all the media files. By making my desktop and laptop the devices sharing files and Internet access from my Media Center PC, the problem was solved. I connected the wireless router and DSL directly to my Media Center PC. The performance issues were completely solved. My desktop and laptop are mainly used for text or access to the Internet for data so they work fine with the erratic speeds of wireless home networking.

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The only thing I don't like about this configuration is that I now have a DSL modem and router in my living room. I was trying to get away from wires and clutter! Luckily, they are small devices that are easily tucked away out of view.

Media Center Extender Devices

When choosing where to locate your Media Center PC and how to use it for both entertainment and office computing, the best solution is to use Media Center Extender devices.

Cross-Reference

Chapter 8 takes a complete look at how Extenders work.

An *Extender* is a small box that connects your TV to your Media Center PC almost as if directly connected as a monitor. The Extender adds the Media Center environment to the TV and enables you to access the user interface and media content including the TV source, such as cable or satellite signals.

Extender devices make your TV set look, feel, and act just like a Media Center PC. This allows you to place your Media Center PC in the location of your choice and connect other TVs in the house using Extenders and your home network.

Moving away from the networking configuration example in the previous section, I now have my Media Center PC in my home office and use Extenders for the TVs in my family room and bedroom. Now my Media Center PC powers all my TVs and I have access to all my recorded TV shows, videos, music files, and photo files from every TV set.

Internet Connection

If you plan on using your Media Center PC to access media content from the Internet, you will want a high-speed connection if you intend to download media files and access streaming media; these activities are like pulling teeth without a high-speed connection. Although it is possible to download media using a dial-up connection to the Internet, media files are usually anywhere from large to huge and will usually take so long to download that you cringe at the thought of doing it with a dial-up service. Watching streaming video files using dial-up also results in a small, low-quality signal that would be hard to view from the couch when using a TV.

With high-speed Internet access you are no longer limited to the media that resides on your computer. A lot of the fun of having a Media Center PC is being able to venture out to get music and video content from the Internet. As you will learn, there are Web sites that will allow you to "rent" movies that are downloaded to your Media Center PC for period of time. You can also purchase music, listen to Internet radio, and share your pictures with friends and family. Just about any of those activities beg for high-speed Internet access.

Prices for DSL and broadband services have come down significantly. I currently subscribe to DSL for $29.95 a month and I am happy with the service. You can usually find high-speed service from either your phone provider or cable system, plus there are many new high-speed services not connected with a utility provider that may serve your area.

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Regardless of whether you connect via dial-up or high-speed access, you will need to connect to the Internet to use your Media Center PC properly. At least once a week you will need to have Internet access to allow your Media Center PC to get your TV listings. That data is what creates your Guide and allows you to schedule recordings of TV shows.

A New TV

As incredible as your Media Center PC is, you interact with it largely through your TV. With your TV being your window into a world of media content and adventures to come (not to mention just plain old watching TV), it should be the best part of your system. Prices of exotic new TVs such as LCD and plasma TVs are now getting down to the point where you may want to seriously consider getting one as the ultimate addition to your Media Center PC and home entertainment center.

As you will learn by the end of this book, it is possible to sit in your living room and do computing tasks you used to do at a desk. With a high-definition TV (and wireless keyboard and mouse) you can use it for word processing, surfing Web sites, and other traditional computing activities.

Wireless Keyboard and Mouse

If there is one complaint I have about Media Center PCs that are being sold today it's that most of them are being sold with the same "wired" keyboard and mouse that come with a regular PC—in my view this is a huge failing for use in a living room or family room setting.

One of the requirements Microsoft should have placed on computer manufacturers using the Windows XP Media Center Edition Operating System is that they sell them with a wireless keyboard and mouse. But, they didn't. That means that you will have to add one if you don't want to be tripping over wires or being tethered 6 feet to your Media Center PC.

A number of wireless keyboard/mouse packages are available, but the one that I like best and would highly recommend is the Media Center Remote and Keyboard from Gyration, Inc., which is both a Media Center PC remote and a mouse that is controlled by hand movements and motions. See Figure 2-11.

The "remote" combines a remote control that replicates the functions of the Media Center PC remote and a mouse that is controlled my hand movements and motions rather than moving it on a flat surface. This is a perfect solution for living room use. You don't even need a coffee table for a mouse pad!

The wireless keyboard is small, which is good because the last thing you want is a large, clunky keyboard and this one is just the right size. If you prefer a conventional keyboard with number and cursor keys, Gyration also sells wireless keyboards with that form factor. In addition, it has a wireless mouse that can be operated by hand movements or on a flat surface like any mouse.

Putting It All Together

With a great monitor, high-speed Internet access, and a wireless keyboard and mouse, you will have an amazing entertainment center powered by your Media Center PC. Now let's look at how all of that media power fits into your home.

Where your Media Center PC ends up in your home is an important decision. Each location you choose will require some modifications to your home and require good planning.

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Figure 2-11: Gyration's Media Center Remote and Keyboard.

If you decide to put your Media Center PC in your living room or family room, you may have to add phone jacks, move equipment around, and even get a new entertainment unit if you choose to go with a Tower Media Center PC.

Locations such as bedrooms have their challenges, including having a large enough TV so that you can effectively see and work with the text on a Media Center PC screen.

Home office use is probably the easiest, but even then you should think about it a bit. If you make your Media Center PC your main office computer you should think about those times when you are simply watching TV or a movie on it. Is your office comfortable? A Media Center PC in the home office may require a comfy new office chair and a set of head phones so nobody else knows you're in there watching Oprah!

See Table 2-2 for a look at each room and how you may want to configure a system for it.

Regardless of which room you decide to put it in, your Media Center PC should have access to the Internet and be networked with other PCs in your house. Consider the following when deciding where to put your Media Center PC:

- Find a comfortable viewing area and seating. Media Center PCs are about watching TV, DVDs, and listening to music, so plan your seating so that you can kick back and relax while doing so.
- Viewing the display for a long period of time, such as when working or even just playing music, means that you need a TV capable of displaying everything on the screen clearly and legibly. If your TV doesn't cut it you will not like using it with your Media Center PC.

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Table 2-2 Typical Configurations for Specific Rooms

	Living Room	*Family Room*	*Bedroom*	*Home Office*
Form	Desktop/Rack Mount or Tower	Desktop or Cube	Tower or Cube	Laptop or Tower
Hard Drive	160–250GB	160–250GB	80–120GB	80GB
Keyboard	Wireless	Wireless	Wireless	Wired or Laptop
Mouse	Wireless	Wireless	Wireless	Wired
TV	27″ or larger	27″ or larger	20″ or larger	Optional
Monitor	Optional	Optional	No	15″ or larger LCD
Speakers	Surround Sound	Surround Sound	Two with subwoofer	Two

- Have a great sound system if at all possible. Hopefully your room can accommodate a surround sound system with a subwoofer and five speakers. It's amazing how much more impressive video—TV, DVD, or even home movies—are with a great sound system.
- Have soft, comfortable lighting that's dim enough for good TV viewing but still provides enough ambient light to see your keyboard and find where you dropped the remote.
- A wireless keyboard and mouse in addition to the MCE Remote Control are essential for a great user experience. Don't shortchange yourself on this important accessory.

Summary

Purchasing a Media Center PC requires an inventory of your current TV viewing habits and the equipment you are currently using for your entertainment center. Where you watch TV will help determine the "form factor" of Media Center PC you need and will also determine if you need to run cables or phone lines to connect your Media Center PC to the Internet or a home network.

The purchase of a Media Center PC is also a good time to think about upgrading your primary TV. New plasma and LCD TVs are ideal for use with a Media Center PC because they can also be used for regular computing such as Web browsing and word processing.

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Chapter 3

The Windows XP Media Center Edition Operating System



In creating a new entertainment-based operating system, Microsoft built Media Center on top of its most stable and powerful version of Windows: Windows XP Professional. Containing all of the features and benefits of Windows XP Media Center allows users of Media Center PCs to continue to use them for standard computing plus for the entertainment experience offered with Media Center.

This chapter takes a look at how Media Center works with Windows XP, the Media Center portion of the operating system, and discusses configuring Media Center and going through the setup process.

Windows XP under the Hood

If you are currently using any version of Windows XP, you'll be right at home using your Media Center PC. In every possible way this is Windows XP business-as-usual. When you turn on your computer you may think they sold you the wrong machine. Except for the opening splash screen, as shown in Figure 3-1, Media Center looks and operates just like Windows XP—because it is.

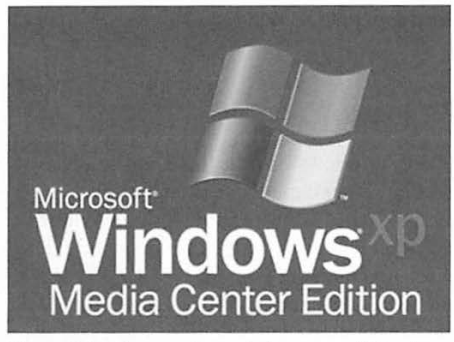


Figure 3-1: The opening splash screen of Windows XP Media Center Edition.

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In creating a media PC, Microsoft has put Windows under the hood and put all of its features to work. Media Center works seamlessly with Windows XP. It uses the many system functions, drivers, Internet connectivity, networking protocols, and system architecture that makes Windows the powerful computing environment that it is.

The use of Windows XP as the underlying operating system for Media Center allows you to continue to use all of the programs, drivers, and utilities that are available for any Windows PC. The good news is that you will be able to continue to use it as a regular PC, which makes it an even greater value when you consider that you get a great entertainment PC, too.

How Media Center PCS Use Windows XP

As an operating environment, Media Center allows multiple users, obtains content from Internet sources, maintains files and directories, and manages media content and rights. Calling on video cards and TV tuner cards and using DVD drives or playing music files are all system-level functions.

Media Center uses Windows XP to manage content, devices, and connectivity to the outside world through the Internet. As a part of Windows XP, Media Center can use all of the media content that you have created with Windows applications. This means your MP3 files, digital photos, and digital videos will all work perfectly in Media Center.

Media Center also uses the file structure and file conventions (files, folders, directories, and drives) you are used to using in Windows. As you will learn, although Media Center uses those conventions to manage content, you won't see much of it. As a TV-centric environment it has simplified many file conventions and does a lot of the work of locating your media files for you.

There is particular integration between Media Center and Windows Media Player for managing music files. Media Player manages music libraries but also manages rights to play music when purchased or downloaded from the Internet. Media Center's My Music application works hand-in-hand with Media Player and uses the same file and rights management.

The integration of Media Center and Windows XP is seamless and as a user you will appreciate how well Media Center reduces the complexity of managing and using media with Windows XP. For media content, Media Center is a great environment. The Media Center portion of the interface has limited its use of the Internet to only those sites that have Media Center–specific content. It does not contain a Web browser like Windows Internet Explorer. It does, however, use Internet Explorer with all of its security and protocol functions as the engine for connecting Media Center to online content. But for computing or regular surfing, you will always need to return to Windows XP.

Setting Resources in Windows XP

This book is not about everyday computing activities using Windows XP, but it is good to review a few key activities in Windows XP that will make your Media Center experience even better.

As shown in Figure 3-2, when you turn on your Media Center PC you go directly to Windows XP. Nothing is different from the regular Windows XP desktop and everything is where it should be. About the only difference is that there is a desktop icon to launch Media Center.

At this point you have the option of using your computer as a standard PC or launching Media Center. We will visit Media Center later in this chapter, but for now let's focus on things you will want to know about and do in Windows XP to fully empower Media Center:

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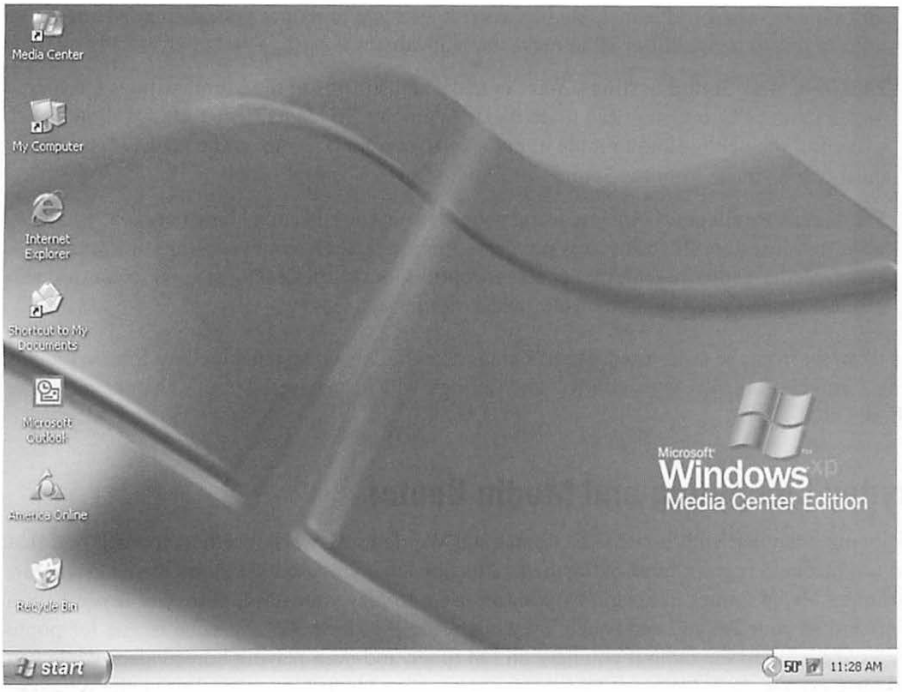


Figure 3-2: The first screen you see when using a Media Center PC is Windows XP.

- **Connect to the Internet:** Media Center relies entirely on the Internet connection you have created in Windows XP. Whether you are using dial-up, a cable modem, or DSL, you should fully establish your Internet connection with your ISP, and whenever possible, be connected to the Internet before using Media Center. If you are not connected to the Internet and want to update your TV program Guide or use Online Spotlight, you need to return to Windows XP and establish your connection.
- **Create Your Home Network:** If you will be using Media Center Extenders or want to get content from other PCs in your home, you need to install and create your home network in Windows XP. Using the Network Wizard, you should think of your Media Center PC as the host computer connecting directly to the Internet.
- **Set Up Your Printers.** Although you may not think of it at first, it is good to have your printer set up when using Media Center. You can print photos from within My Pictures—but only if you have installed a default printer.
- **Set Up Your Displays.** You should set all of your display preferences in the Properties tab of your Display Control Panel. If you're using both a TV and computer monitor, you can fine-tune each of them and how they are used plus set the size of your desktop. Media Center prefers—but does not require—a moderate resolution display setting to optimize video performance. If you have a large monitor and your display settings are 1024 × 768,

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for example, when you launch Media Center it asks you to reduce your display settings. You need to return to Windows XP to make that adjustment.

- **Establish Your Sound Settings.** You can make adjustments to the sound settings for your Media Center PC, but you need to do this in Windows XP. Media Center always allows you to control the volume and to mute it, but spatial, surround sound, and equalizer settings must first be made from the Sounds and Audio Devices control panel.
- **Set Access Privileges.** If you are using your Media Center PC in a home network, you will want to fully establish your access privileges from the User Accounts settings in Control Panel. Media Center has additional access controls, but at this level it is good to control who can use Media Center or access your media files.

As you can see from the tasks listed, Media Center relies heavily on system functions from Windows XP. Media Center has its own set of controls and settings, which are covered in this chapter and those that follow.

Everyday Computing and Media Center

As you get more familiar with how Media Center and Windows XP work together, you will find that you can use Media Center for most of the media functions that you used Windows Media Player for.

By running Media Center in a window you can use it to play your music files, and if you have a TV tuner card in your PC you can watch TV while using Windows XP. The same is true for photo slideshows, listening to the radio if you have an FM tuner, and even playing home videos while you are working away. Figure 3-3 shows a TV program playing in a Media Center window on the Windows XP desktop.

As you use Media Center you will discover that it's good practice to start organizing your media content so that you know where the files are located. You will also want to start thinking about getting all of your analog media converted to digital files (as discussed in Chapter 1) for use in Media Center.

You convert most media with Windows XP applications. Although you can capture music from audio CDs within Media Center, you will continue to convert other media such as photographs and home videos with your favorite applications and devices, such as Adobe Photoshop and a scanner. You may also have applications for this purpose that came bundled with your Media Center PC.

For example, the Media Center PC I'm using came with several applications for capturing video from a camcorder or other analog sources, capturing and editing pictures from digital cameras, and also for ripping audio files. These will help you get all of your media converted and stored for use in Media Center.

After you've learned how to work your media files and general device settings for use with Media Center, you're always just one click away from the Windows XP desktop and all the applications, Internet browsing, and power computing functions it offers.

Media Center Operating System

The heart of a Media Center PC is the Media Center operating system. It is an extension of Windows XP and acts as a highly visual TV-like version of Windows. Because it is designed for use on a TV, much

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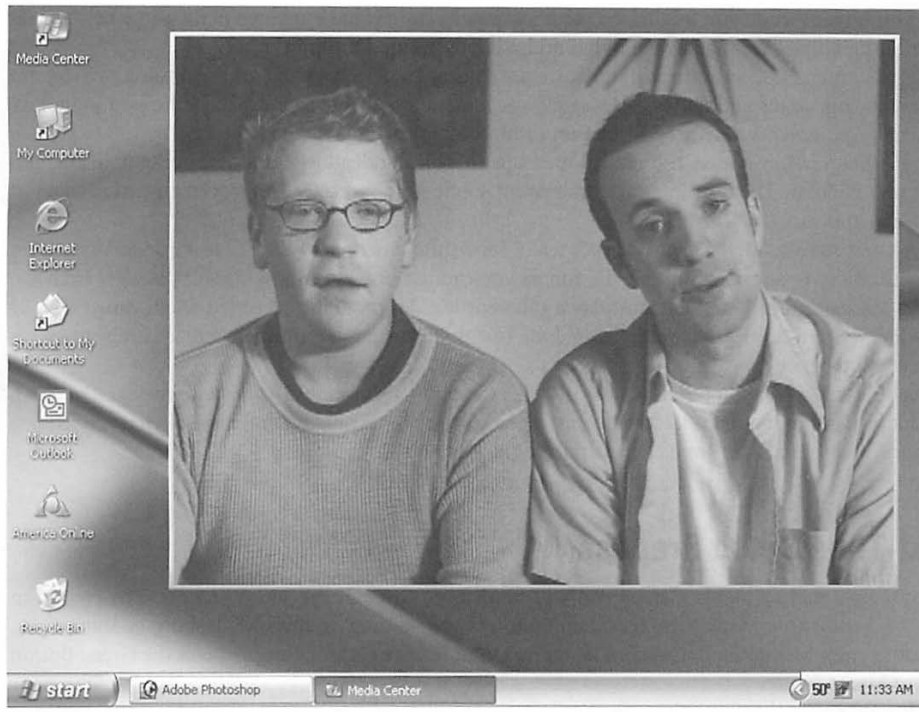


Figure 3-3: Media Center playing a TV program on the Windows XP desktop.

of the user interface and complexity of the traditional Windows environment has been streamlined and simplified.

The streamlined user experience is essential for enabling you to control all actions using a TV and a remote control. Microsoft has done a great job of taking the complex process of finding content and managing media and lets Media Center do the heavy lifting for you. Everything you need to do, or will want to do, is on the screen when needed.

Menus and action items come and go. They appear at the right time and then go away at the right time. Everything fades in and out and menus scroll in subtle animations. There is a constant navigation trail that enables you to return to the previous screens or just go to the Start Screen. This is a sleek, sophisticated version of computing never seen on a version of Windows until now.

As a Windows user you will feel right at home. After the Welcome screen you arrive at a Start Screen. As you begin to navigate and arrive at files, you will instantly know how to use them. Files are nestled in folders just like in Windows. Perhaps it's a glimpse of where Windows is headed in general, but this version is here now and it's great for playing media.

Three Versions so Far

To date there have been three releases of Media Center. The first version, Media Center 2002, arrived in the fall of 2002. The next version, Media Center 2004, was released in September of 2003. The current version, Media Center 2005, keeps the tradition going with a fall 2004 release.

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Depending on when you purchased your computer you may have any one of the three versions. Is it worth upgrading? Yes. Each version has added more features and power.

Media Center 2002 introduced Media Center and offered TV viewing and recording, a program Guide, playing videos and DVDs, playing picture files, and listening to music. The PCs it ran on had the same requirements discussed throughout this book for being a media PC.

The 2004 version added the ability to listen to radio and added Online Spotlight to include interactive content. The user interface underwent subtle yet appreciated improvements in navigation and visual appeal.

The latest release, Media Center 2005, really shows the potential of the PC as a true media center. With the ability to support multiple TV tuners you can use one PC to power multiple TVs. Each TV, using a Media Center Extender, can play a different live TV program, recorded show, music file, or video file. System-level improvements include the ability to serve multiple users and rely more on Internet content.

Regardless of when you purchased your Media Center PC, you should upgrade to the latest version. Contact your computer manufacturer for an upgrade. It's a simple process, and most often if you request an upgrade within a short time after its release there is no cost.

First-Time Setup Process

On your first visit to Media Center you will need to go through the setup process. The callout in Figure 3-3 shows the Media Center launch button found on the Windows XP desktop or Start menu. Click it to enter Media Center or, even better, use your remote control. Simply press the Green Button to go to Media Center.

When you press the Green Button you are swept away from the computer-centric world of Windows XP to the TV-like environment of Media Center. Regardless of what display you are using, Media Center looks the same. The graphics, type, and images are resolution- and device-independent and visually appear the same on any display.

The screen always seems to be moving—because it is. The backgrounds have subtle shifts in light and color and all actions are animated with smooth transitions.

Once in Media Center you can use your mouse, keyboard, or the Media Center Remote Control to perform any action including entry of text. You may want to try all of them to see which you like using best in Media Center. Often the remote control is easiest but it's a matter of how your Media Center PC is set up and your personal preference.

Figure 3-4 shows the first screen in the setup process. Let's go through the process step-by-step.

The Media Center Setup screen appears the first time you use Media Center. You have two choices: Required Setup and Optional Setup. For now, we will look at the Required Setup steps.

Click the Next button to move forward in the process. The next screen, as shown in Figure 3-5, displays the Media Center Privacy Policy. You can, and should, choose to read the policy by clicking the Media Center Privacy Policy button. Click the Next button to move to the next screen.

Figure 3-6 is the next screen in the setup process and it allows you to choose to connect to the Internet when necessary to obtain enhanced content and TV listings. Enhanced content includes cover art for albums in your music collection, music information such as track names and artist information for CDs that you rip to your hard drive, and TV listings that will populate your on-screen program Guide if you plan to use your Media Center PC for TV viewing and recording. This is all-important information for playing media so if you have an active Internet connection such as DSL, you should choose to have Media Center automatically connect to the Internet to retrieve it. If you are using

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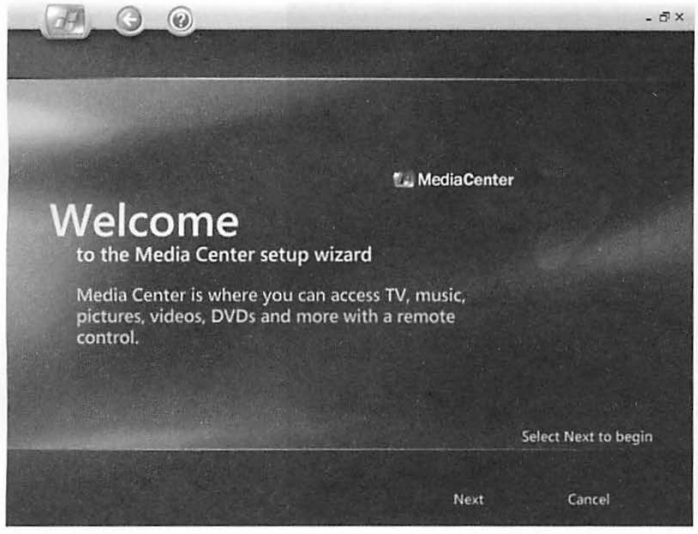


Figure 3-4: The first screen in the Media Center setup process.



Figure 3-5: The Media Center Privacy Policy screen.

dial-up or are not always connected to the Internet, you should select No and connect only when needed.

There is also a button that allows you to review the Privacy Policy again if you choose.

If you chose to have Media Center automatically connect to the Internet to get data, the next screen, shown in Figure 3-7, establishes whether your Internet connection is always on, such as with

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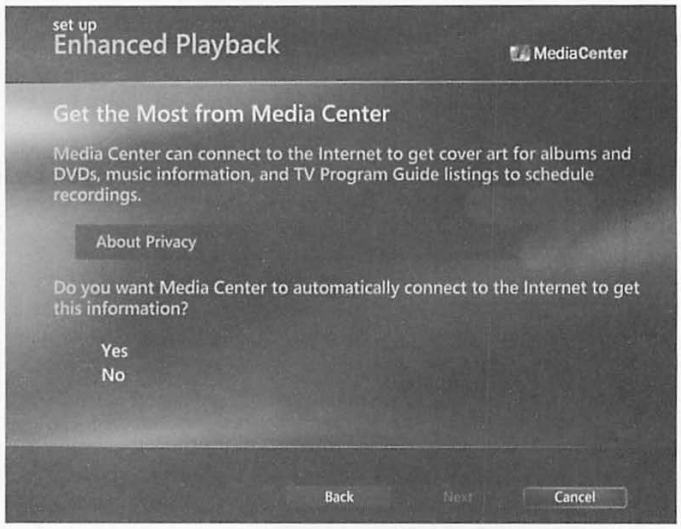


Figure 3-6: Decide how to connect to the Internet for enhanced content.

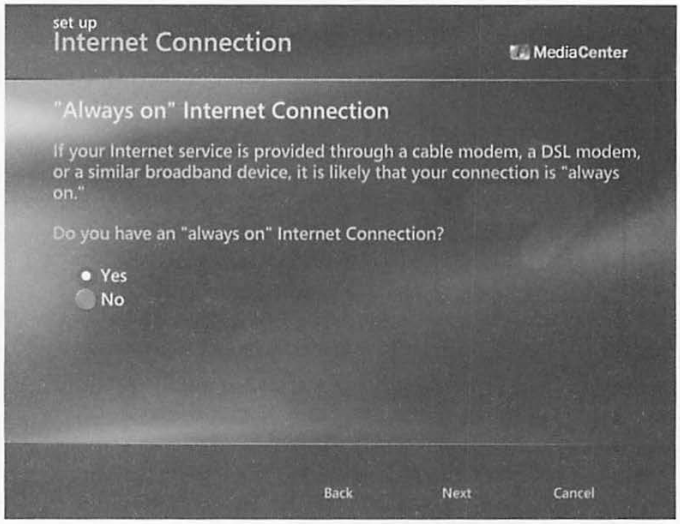


Figure 3-7: Select what type of Internet connection you use.

DSL or broadband service. If you do not have such service or are using dial-up, you should choose No.

Even with a fast broadband connection you can still elect to use the manual download process. You can always return to the Settings section of Media Center and change this option at a later time, so go with which selection seems to make most sense for your Internet connection. After clicking the

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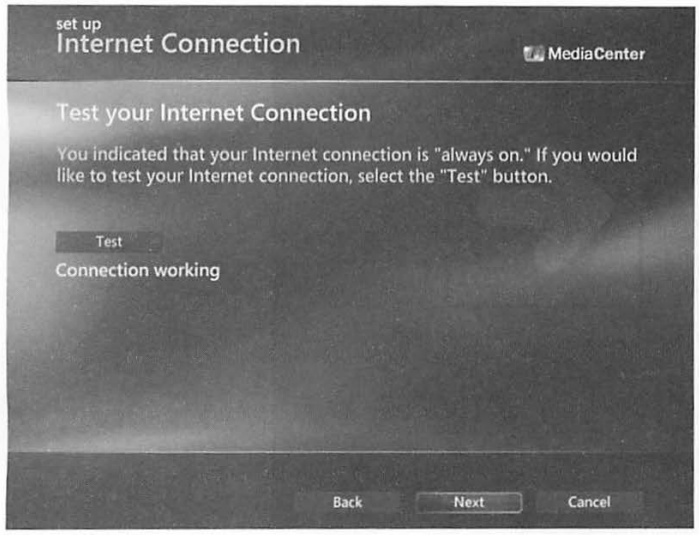


Figure 3-8: Media Center has established that the Internet connection is working properly.

Next button you are presented with the screen shown in Figure 3-8, which confirms that an Internet connection has been set up. This screen enables you to test your connection if you want, and it is a good idea to do so at this step in the process because the next few actions are Internet-based. If you are having problems, the Test screen will help you through them. If you established a connection to the Internet before starting this process, the Test button will confirm the settings and that the connection works.

At this point in the setup process, you have completed the Required Setup steps. You are presented with a screen that tells you that you have successfully set up enhanced playback and Internet connection. When you click Next, you are taken to the Optional Setup screen that presents you with choices to configure your TV tuners (if your PC is equipped with them), your program Guide, monitor settings, and speakers. The last screen is shown in Figure 3-9.

If you plan to use your Media Center PC for TV viewing and recording and have either a single TV tuner card or a dual TV tuner card setup, select the first option to configure tuners, TV signal, and Guide. The first step in the process is selecting the region you are viewing from. The default is United States, but you can choose other regions if you are located outside of the United States.

The next few steps require that you know how you get your TV programs. This process should be simple but may require some special information if you subscribe to cable or satellite TV. It's good to have that information available before you start. Table 3-1 shows you what you will need to complete this part of the setup.

Figure 3-10 shows the screen where you select the TV source you will be using. You can choose to have Media Center configure your TV signal for you automatically or you can choose to do it manually. Selecting the automatic process is recommended and Media Center will look for the signals from your TV tuner cards and establish what type of signal you are using.

If you choose the automatic process, you see the screen shown in Figure 3-11. It tells you that you should have your TV sources actively connected to your PC for Media Center to detect them. For example, if you are using a set-top box for cable or satellite, be sure it is turned on.

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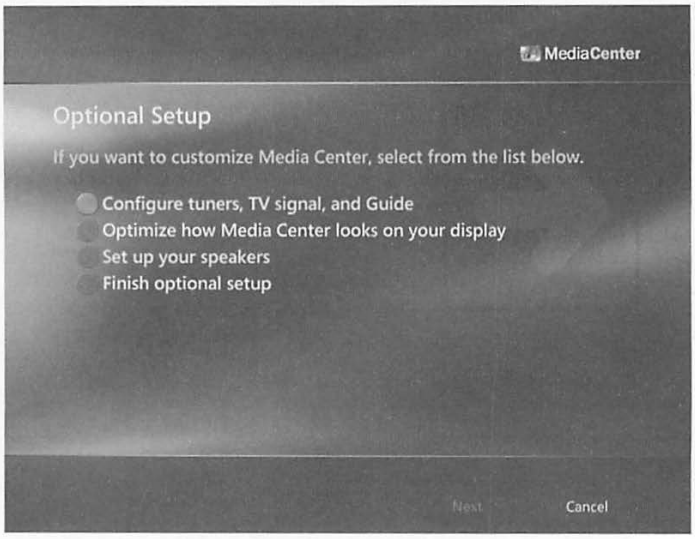


Figure 3-9: The last initial setup screen.

Table 3-1 Necessary Information to Set Up Media Center

TV Signal	*Information You Will Need*
Antenna	Your local Zip code. If you are in a large market spanning multiple cities (such as Chicago or Los Angeles), you need to know the station call letters that represent the channels for ABC, NBC, and other networks where there is more than one station carrying them.
Cable	You need to know if you're using cable attached directly to your TV or a set-top box and what cable lineup you subscribe to. You also need to know what channel number your TV set uses (usually 3 or 4) to tune to the set-top box. The channel lineups from cable systems vary based upon the service you subscribe to and the type of set-top box you use. This information is usually on your billing statement or you can call your cable system if you're not sure.
Satellite	As national services you will be getting all of the channel information for the service, but there is an option to "localize" your satellite listings if you also subscribe to your local channels. You need to know what local market service you have (you can, for example, subscribe to Chicago-area stations even if you live in California using a service such as Dish). You also need to know what channel number your TV uses to tune to the satellite set-top box.
None	If you will not be connecting your Media Center to a TV source at this time or will be using a direct video feed (such as one from a VCR), you can select "None" at this time. You can always return to the TV Settings menu and change this at a later date.

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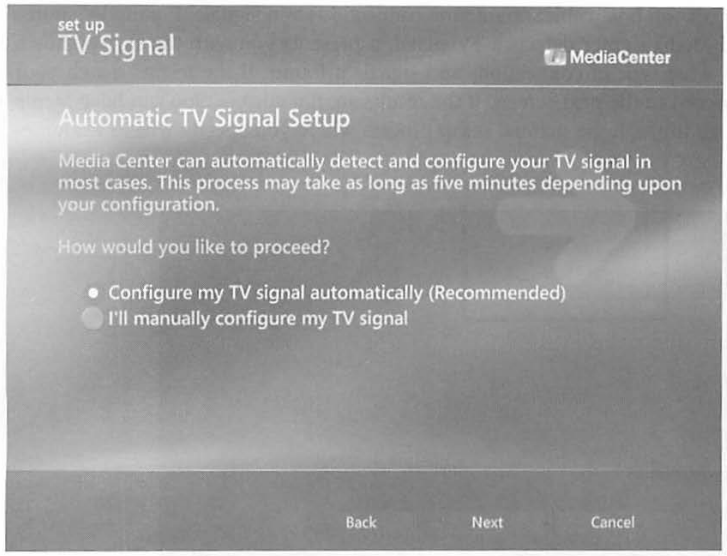


Figure 3-10: Choose automatic or manual selection of TV signals.

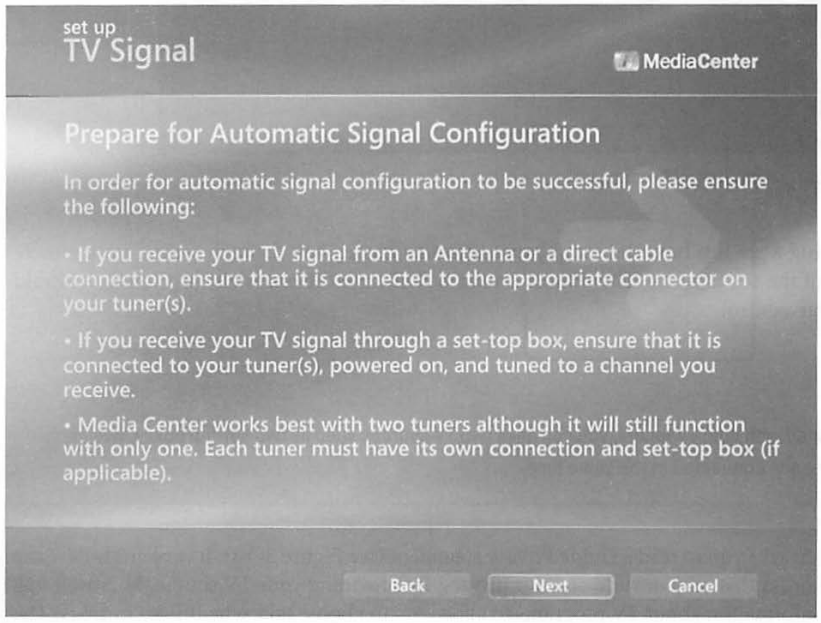


Figure 3-11: Things to do to prepare for automatic detection of TV sources.

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Media Center scans for set-top box, cable, or antenna connections and signals. If your TV source is connected properly and Media Center detects a TV signal, it presents you with the screen shown in Figure 3-12, indicating what type of connections and signals it found. If the results match your configuration, you can proceed to the next screen. If the results are not correct, you can have Media Center retry or choose to go through the manual setup process where you specify what TV sources are connected.

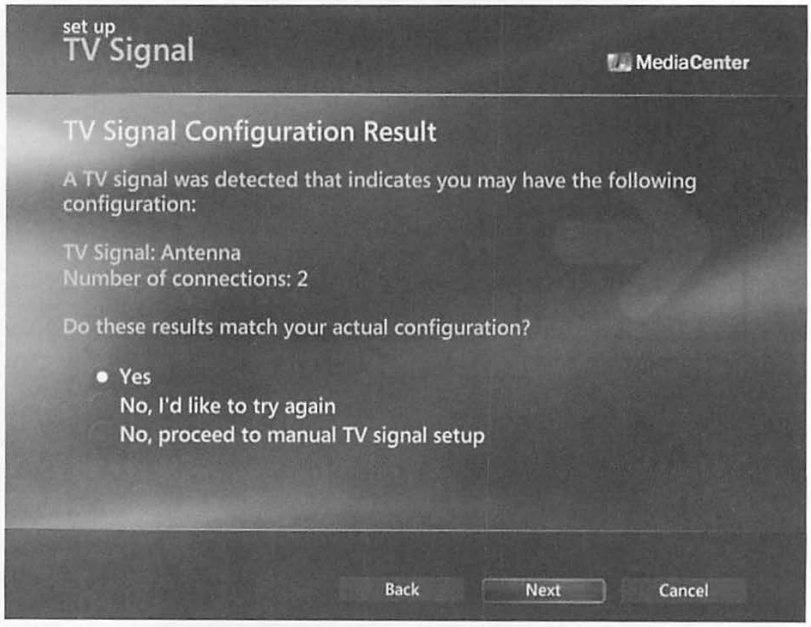


Figure 3-12: Confirmation that TV tuners and signals have been identified.

If you are using a set-top box, the setup procedure also guides you through setting up a remote sensor in front of the set-top box. The remote sensor will change the channels, just like you would using your remote control.

Note

If your PC is equipped with dual TV tuners, you can have two TV sources such as two set-top boxes, two cable boxes, or two antennas connected at the same time.

The next screen asks you to read a Guide Privacy statement (see Figure 3-13). It explains how using the Guide is a process that may intrude on your privacy. By providing your TV source, Microsoft will be sending you information about TV programs to allow you to choose and schedule recordings. The

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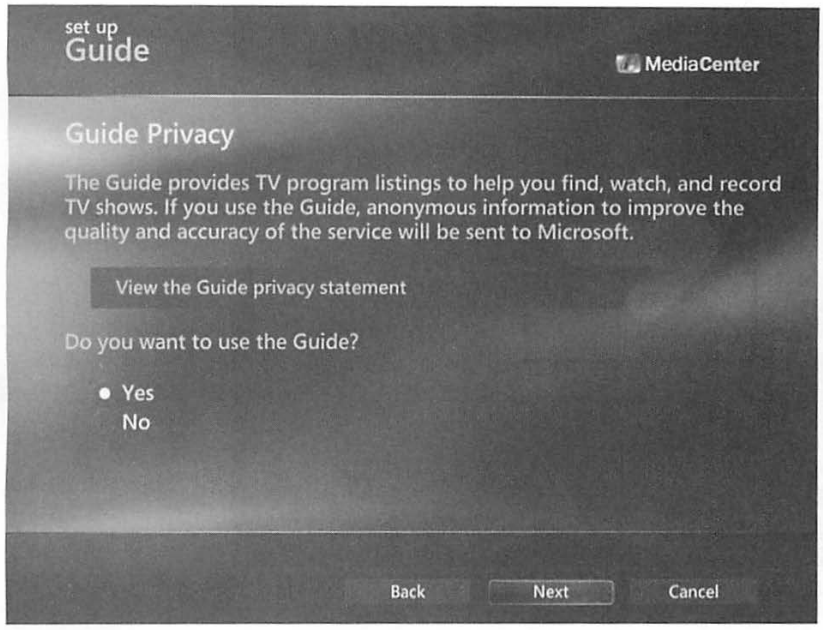


Figure 3-13: Viewing the Microsoft policy on protecting your privacy.

types of TV programs you view and record may not be something you want to share with anyone else, and to address any concerns you may have about that issue Microsoft presents its privacy information to you at this point in the process.

What you will learn is that they are sending you data and that they are also collecting information about how you use the data and your computer configuration. The data they collect is required to provide you with Guide service. It includes what type and speed of connection you have to the Internet, your channel selections, and some basic information about your PC. The policy states that they are not collecting information about your viewing habits or choices or any personal information about you, including your name and address.

Figure 3-14 shows the screen that completes the process by stating that you agree to use the Guide. Again, you have the chance to view the privacy statement. After making your decision to use or not use the Guide, click the Next button and you will have to go through one more screen where you need to review the Terms of Service for using Media Center and the Guide.

Since you will be using Media Center to record TV programs, knowing which shows are on at any given moment is important to you, and you will be relying on the Guide to schedule the recordings, Microsoft uses the Terms of Service to state that there may be times when the equipment doesn't work or that the data is not right. Those things do happen, and Microsoft does a good job of explaining that it makes every effort to be accurate, but should there be a mistake, the Terms of Service also states that in exchange for using the product at no charge, you won't hold Microsoft liable.

After reviewing and agreeing to the Terms of Service as shown in Figure 3-15, you are through with all the legal documents and can start the process of populating Media Center with Guide data.

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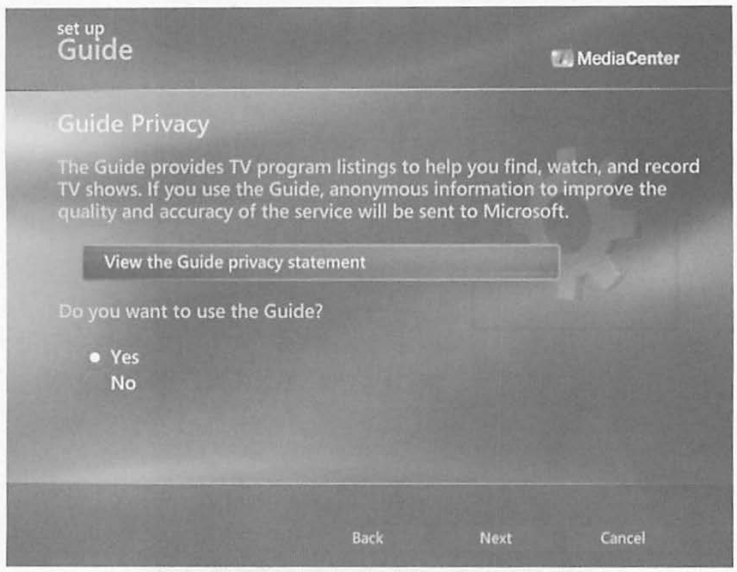


Figure 3-14: Confirming that you want to use the Guide.

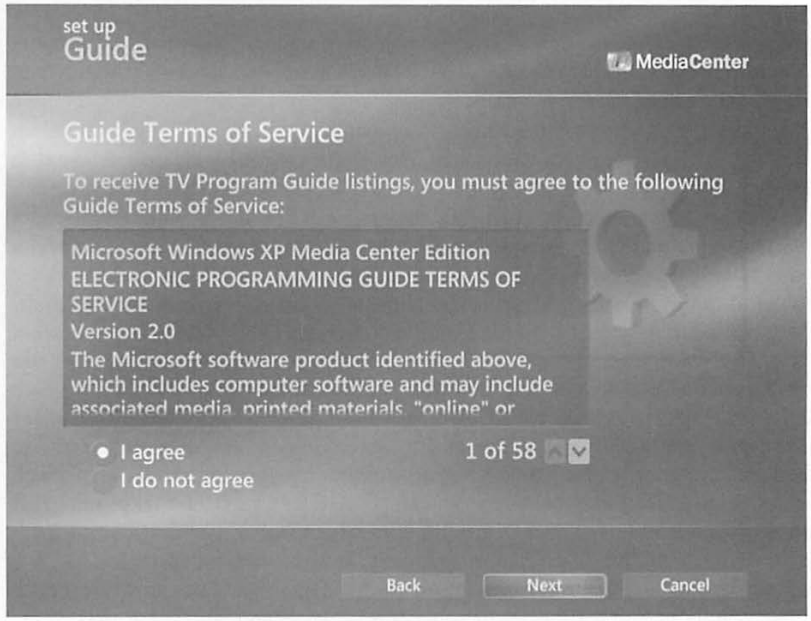


Figure 3-15: Media Center Terms of Service screen.

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The process of getting your channel lineup and information about the TV shows you have access to with your TV signal starts by providing your Zip code, as shown in Figure 3-16.

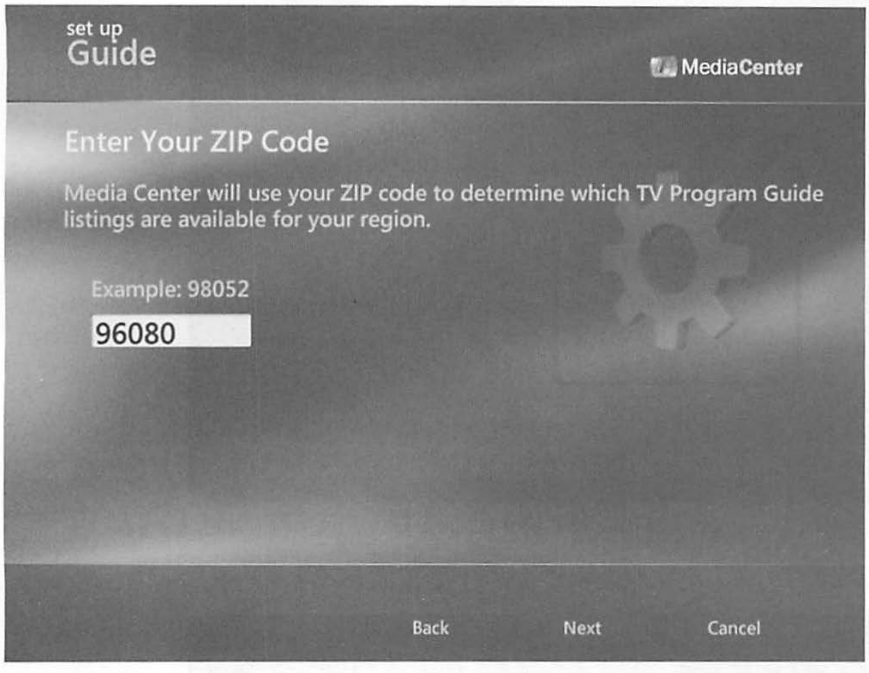


Figure 3-16: Enter your Zip code to locate your channel and service provider lineup.

After you enter your Zip code and click the Next button, Media Center uses the Internet to download information about the TV sources in your area (cable systems, local TV stations that are available using an antenna, and also satellite system local channel package data). Figure 3-17 confirms that this process is taking place and lets you know when you can click the Next button.

After the process of downloading information about your TV sources is finished, you are presented with a screen where you choose which TV source—and channel lineup—you use. Depending on your location and service provider the choices can be simple or complex. Do your best to identify the right TV source and then click on it as shown in Figure 3-18. If you don't get it right you can always return to this setting once you use Media Center and make changes. Click the Next button to proceed.

If you have chosen to use the Guide, Media Center downloads TV listings and populates your Guide. At this point you are presented with a confirmation screen that tells you the process is done and that at any point you can go to the Settings menu to make changes to the choices you made in the setup process.

After completing the setup of TV tuners, TV signals, and the Guide, the next step in the process is to optimize how Media Center looks on your display. This allows Media Center to make adjustments to text and graphics to work best on the type of display you are using. Figure 3-19 shows the first screen in this procedure.

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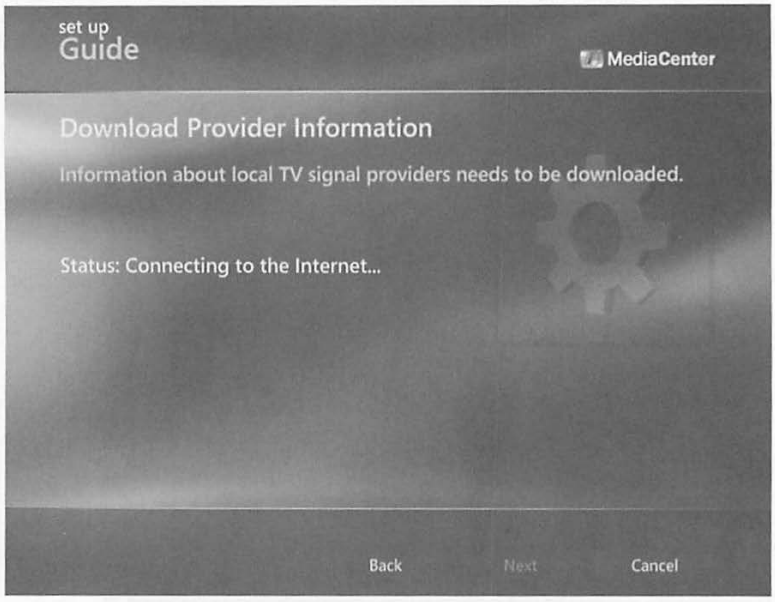


Figure 3-17: Media Center gathering data about your TV sources.

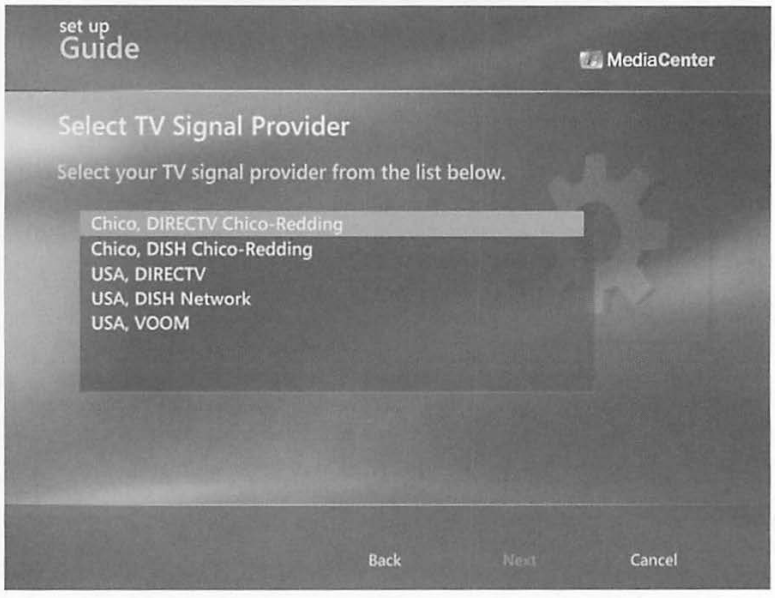


Figure 3-18: Selecting your TV source.

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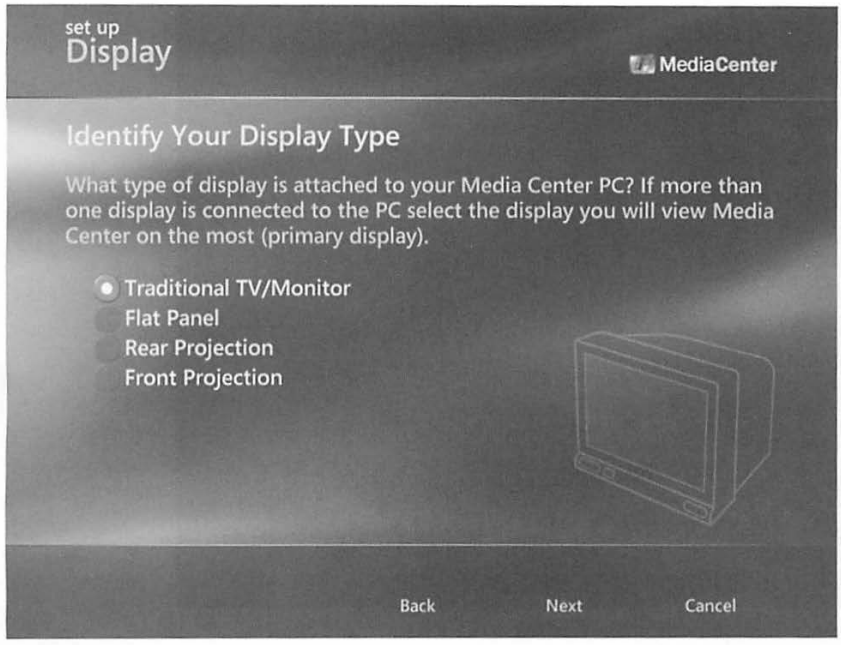


Figure 3-19: Identifying the type of display you are using.

Because you can have more than one display connected to your Media Center PC at one time (such as a computer monitor and a TV), you are asked to identify which display you will be using most. In the following example, a traditional TV is used as the primary display. Figure 3-20 shows the next screen, where you identify the type of connection you have between the video card on your PC and your display. In this example, an S-Video cable connection is being used. If you are not sure, the screen displays graphics of the type of connectors used for each type of connection.

Once you have identified the type of connection, the next screen, as shown in Figure 3-21, asks you what display width you have. A traditional TV is referred to as "Standard" and has a 4:3 aspect ratio. Many new TVs are in a letterbox format with a 16:9 ratio. The screen shows a graphic for each display width as you move your cursor over the choices, which will help you select the right one.

After you have selected the display width, you see the screen shown in Figure 3-22, which allows you to have Media Center make adjustments to improve the way the screen will look when using Media Center on your chosen display. You can choose to keep the settings you have if the screen looks great, or choose to preview the automatic adjustments.

Note

It is good to preview the automatic adjustments and see if they improve the quality of what you see on the screen.

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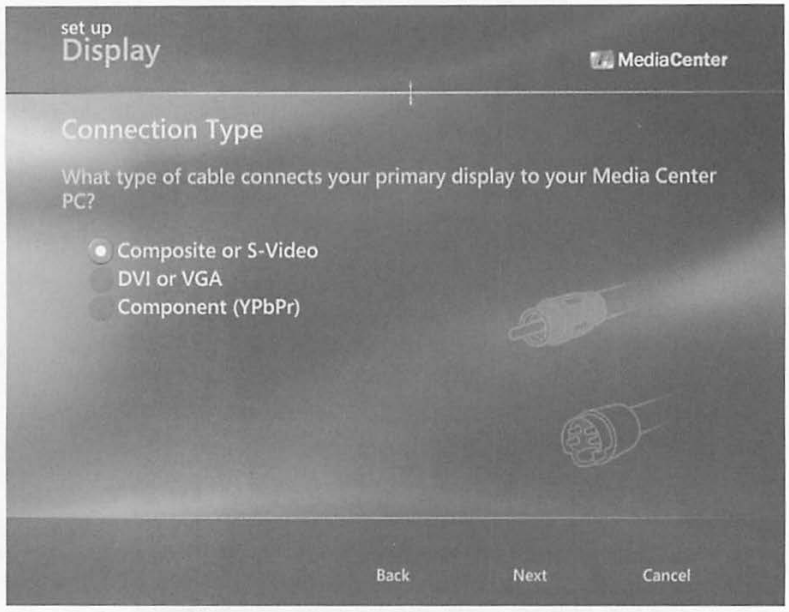


Figure 3-20: Choose the type of connector you have between your PC and display.

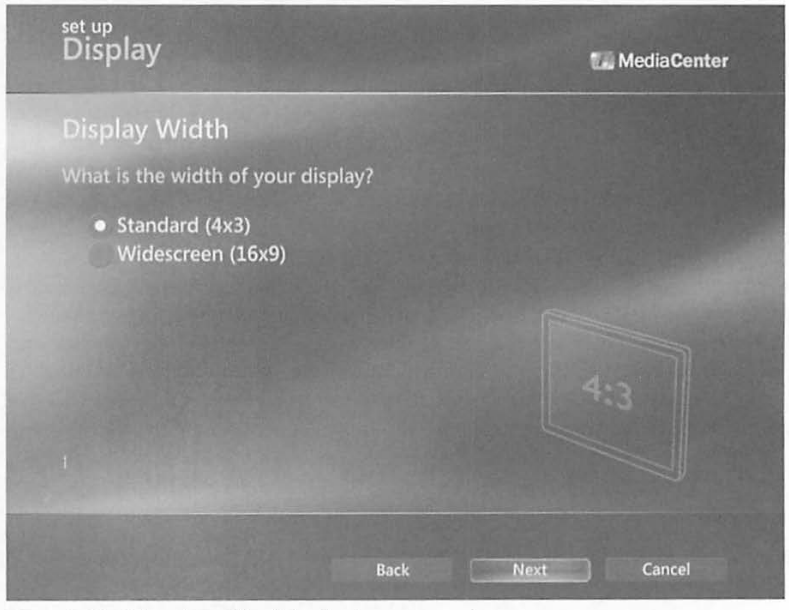


Figure 3-21: Select the width of the display you are using.

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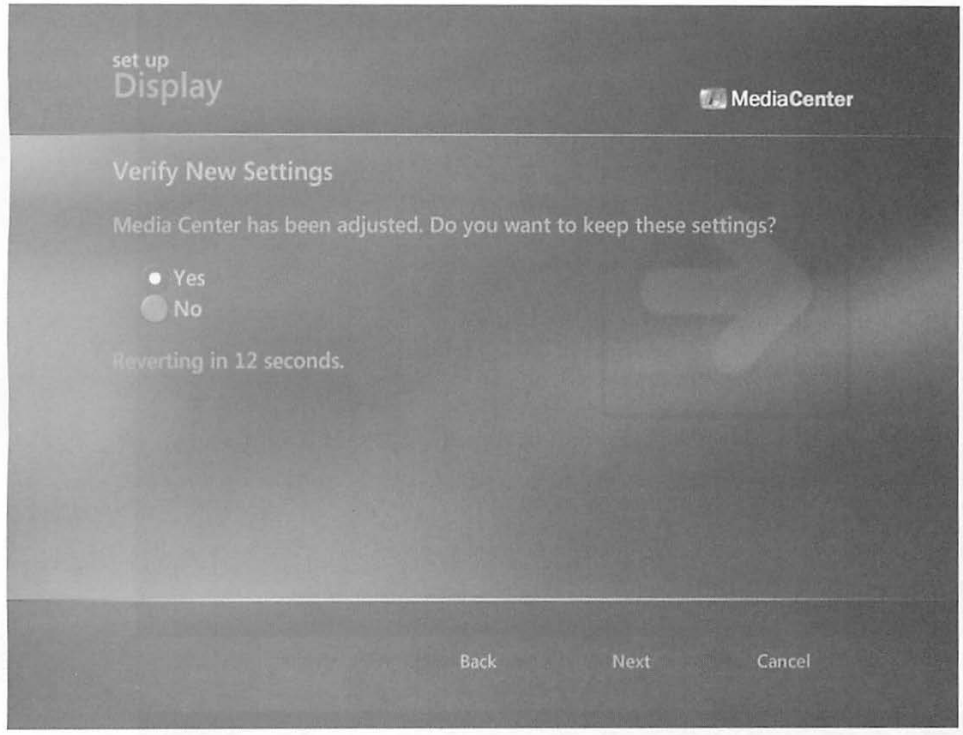


Figure 3-22: Optimizing Media Center for your display for best viewing.

If you like the automatic adjustments, you can keep them or choose to discard them. You can always return to the setup menu in the future to make adjustments to display appearance.

The next step applies if you are using a TV as your primary display. Figure 3-23 shows the screen that enables you to use larger fonts when using a TV. The larger fonts are easier to read and more legible on TVs, which are seldom as sharp or have as high a resolution as computer displays. By selecting Yes, larger fonts will be used when you are using Media Center.

The final Display setup screen enables you make further adjustments to your display by adjusting brightness, contrast, and other settings. At this point, you can select "Finish this wizard" as shown in Figure 3-24 to complete the display setup.

Cross-Reference

Further display adjustments are covered in greater detail in Chapter 9, which discusses how to fine-tune your computer monitor or TV to get the best picture when using Media Center.

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Figure 3-23: You can choose to use larger fonts in Media Center for TV viewing.



Figure 3-24: You can make further display adjustments or finish the Display Wizard.

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The next setup procedure is to identify what type of speaker setup you are using with Media Center. After going through the first speaker setup screens that introduce you to the Wizard for speakers, you arrive at the screen shown in Figure 3-25, where you identify how many speakers you have attached to your Media Center PC. In this example, a standard set of two speakers has been selected.

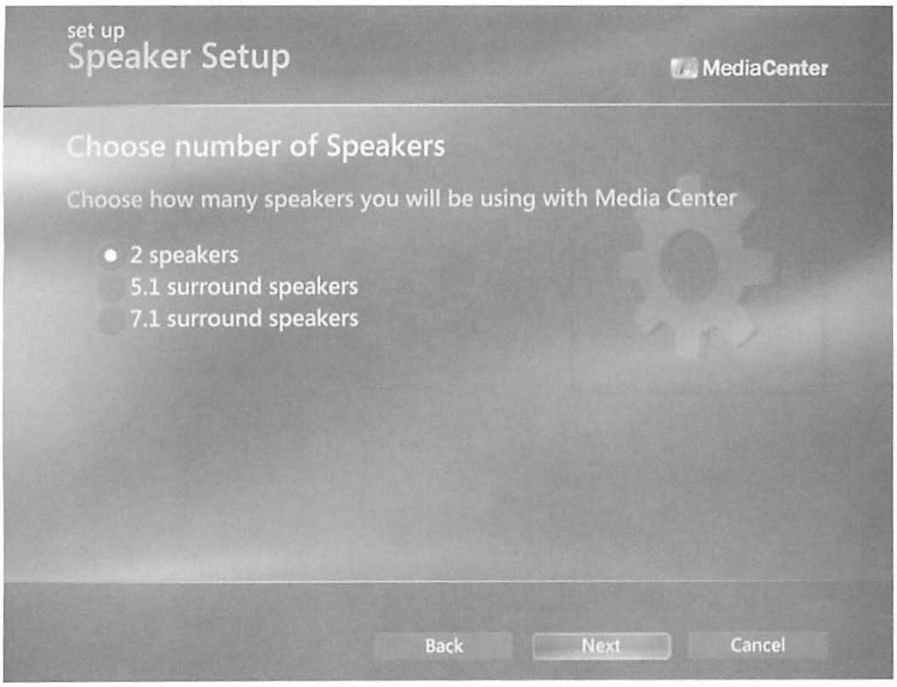


Figure 3-25: Select how many speakers you have connected to your Media Center PC.

Once you have completed the speaker setup, you are through with the initial Media Center setup procedure and can begin using Media Center.

Summary

Media Center is an operating system that comes only on Windows XP Media Center Edition PCs. Running on top of Windows XP Professional, Media Center offers you all of the features and benefits of a high-end PC running Windows XP. You can continue to use all the programs you currently use. Media Center is an extension of Windows XP that is TV-centric, highly visual, and can be viewed on a TV using only a remote control if desired. It is great at managing and displaying media content plus viewing and recording TV shows.

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Prior to using Media Center for the first time, it is a good practice to use Windows XP to set up your connection to the Internet, organize your media files, set your display settings, and establish a home network if you plan to use one. Media Center uses all of those actions during the setup process.

Before you can use Media Center, you will need to go through a series of Setup Wizards that will establish how you connect to the Internet, what type of TV signals you receive, what type of display you are using, and how many speakers you have connected to your Media Center PC.

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Chapter 4

Media Center Experiences



Media Center PCs combine PC hardware optimized for media with a set of unique experiences for managing and playing media. The experiences are completely integrated with the Media Center operating system and all share the same file conventions and use the same actions and controls for playing media. Each experience can be controlled using a mouse, keyboard, or remote control.

Right out of the box, Media Center PCs are ready for media. Everything you need—both hardware and software—is part of the system.

In creating a Media Center PC, Microsoft had a high bar to jump over: the TV. Think of how effective the TV user interface is. You pick up a remote control, press the power button, and the TV turns on in a matter of seconds and starts playing. It has two basic actions: turn channels and adjust volume. Not only is it amazingly simple, it works perfectly—at least until the TV breaks, which nowadays is not too often.

It would be hard to say that Media Center PCs are at that level of hardware sophistication (PCs are not yet instant-on devices and they do need a reboot now and then), but the Media Center operating system and experiences are getting close to that level on the software side.

This chapter gives you a tour of the suite of experiences that come standard on every Media Center PC. Later chapters explore each one in greater detail.

Media Center Start Screen

You launch Media Center either by clicking the "Green Button" Media Center icon on the Windows XP desktop or by pressing the Green Button on the remote control, as shown in Figures 4-1 and 4-2.

Media Center runs as an application in its own window and it can run simultaneously with other Windows XP experiences. It opens full-screen but the window it runs in can be resized or minimized.

After a brief splash screen welcoming you to Media Center, you arrive at the Media Center Start Screen, as shown in Figure 4-3.

As a Windows XP user you should be familiar with the Start button on the Windows XP desktop. The Start button is used to launch programs in both Windows XP and Media Center. The Start Screen in Media Center will launch only Media Center experiences—not Windows programs.

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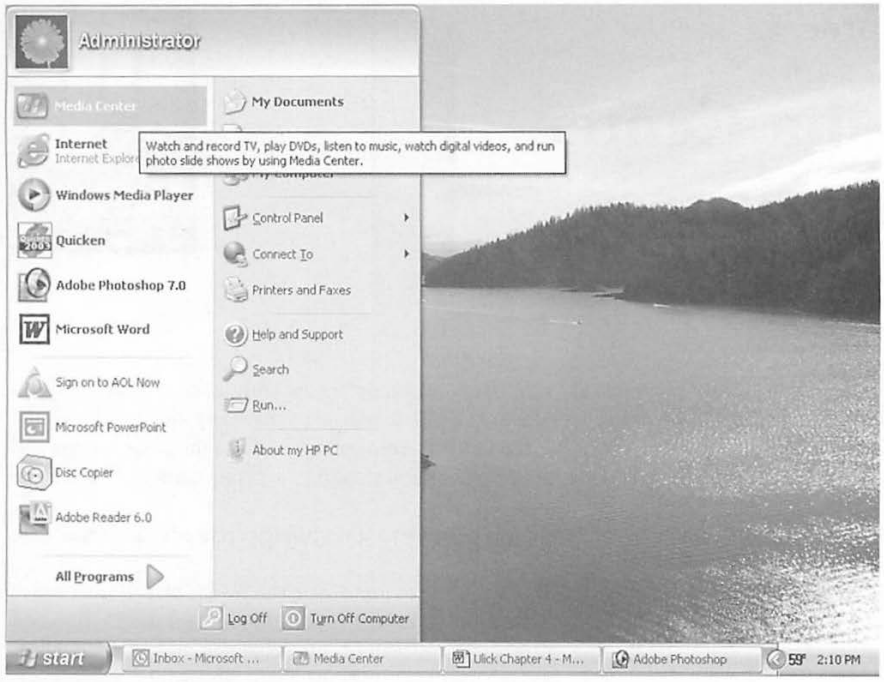


Figure 4-1: Click the Media Center icon to launch Media Center.

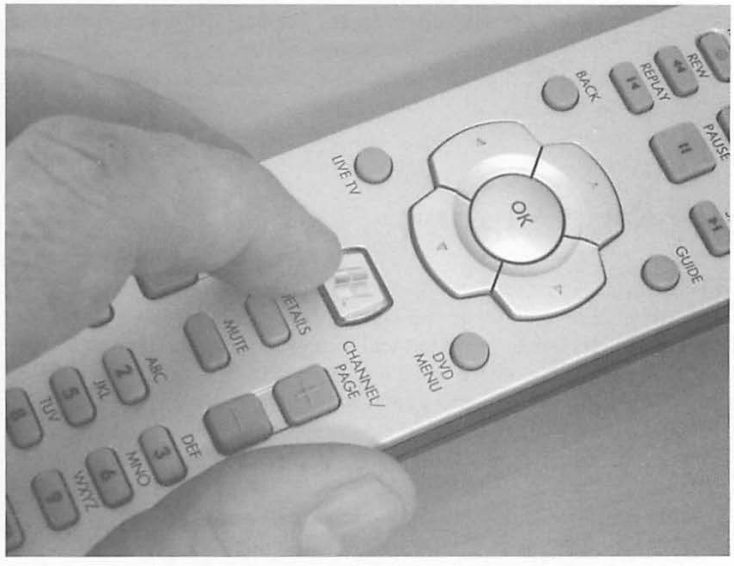


Figure 4-2: Use the Media Center Green Button on the remote to launch Media Center.

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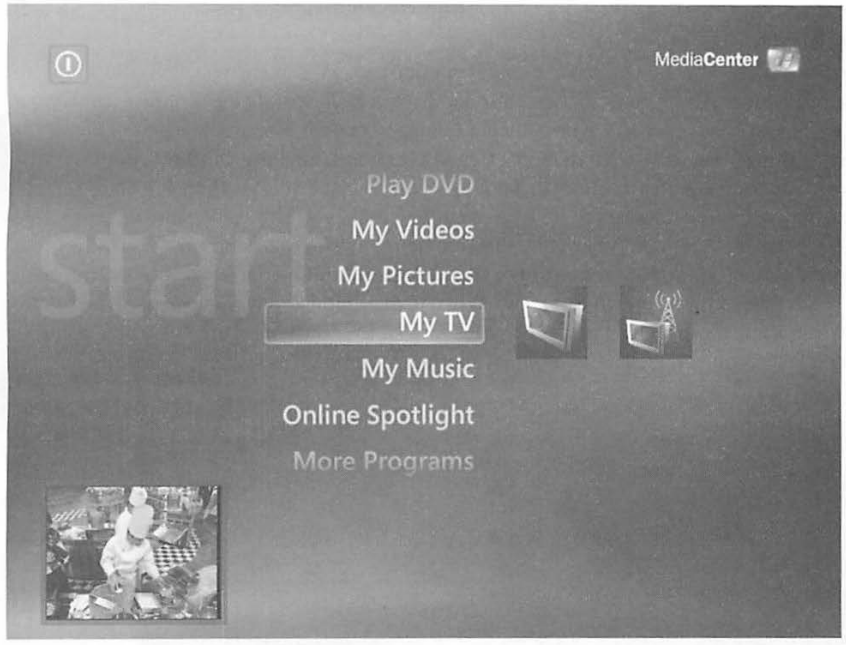


Figure 4-3: The Media Center Start Screen.

User Interface

The Start Screen acts as the main menu and establishes the look, feel, and navigation for all of the experiences of Media Center. Using a full-screen display, it is designed to be a portal to entertainment content designed for viewing and controlling from a distance. All of the icons, text, and menu items must be easily seen sitting away from the screen. For example, the interface should be readable and comfortable to view while sitting on a couch about ten feet away from a TV.

This is important to consider because your first use of Media Center may be while using a computer monitor. In that case, the type is large and the icons are huge. The amount of information on the screen at any time is limited when compared to programs running in Windows XP.

Media Center has been designed to be a TV-like experience. The choice of colors, fonts, and subtle transitions gives Media Center a great TV user interface. How well does it work on a computer monitor? Well, it depends on if you like to watch movies or TV ten inches away from the screen! Generally media viewing is best done from a comfortable distance while sitting back and relaxing. You probably won't be sitting forward hunched over a keyboard with your elbows on a desk staring intently at the screen if you want to watch a TV program.

When viewing media such as DVDs or TV, you will find Media Center's user interface makes perfect sense. One of the nicest touches is that the screens in Media Center look the same whether using a TV or virtually any size and resolution of computer monitor.

When you change the resolution settings of your computer monitor while using Windows XP, everything on the desktop changes size. Text and icons that are large at 800 × 600 become tiny at

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1600 × 1200. If you launch Media Center at either display resolution everything on the screen will look the same—it's device-independent.

In addition to looking the same from computer monitor to TV screen, you will also come to appreciate the navigation. All actions can be controlled from a keyboard, using a mouse, or using a remote control. This makes it easy to navigate Media Center from a desk or a couch.

One of the first things you will notice in Media Center is that it doesn't use windows, pop-up/pull-down menus, or large screens that require scrolling. As you navigate you go from screen to screen. This limits how much information can be on a screen at one time; you will view many screens while using it. Media Center includes a number of methods to help move to the right screen quickly.

Using the Back button on the remote control or the Backspace key on your keyboard you can back your way out of any screen to the previous screens. When using a mouse, any movement of the mouse brings up both a shortcut toolbar and a media playback toolbar as shown in Figure 4-4. These controls fade away after a few seconds of inactivity or when another action such as starting a program occurs.

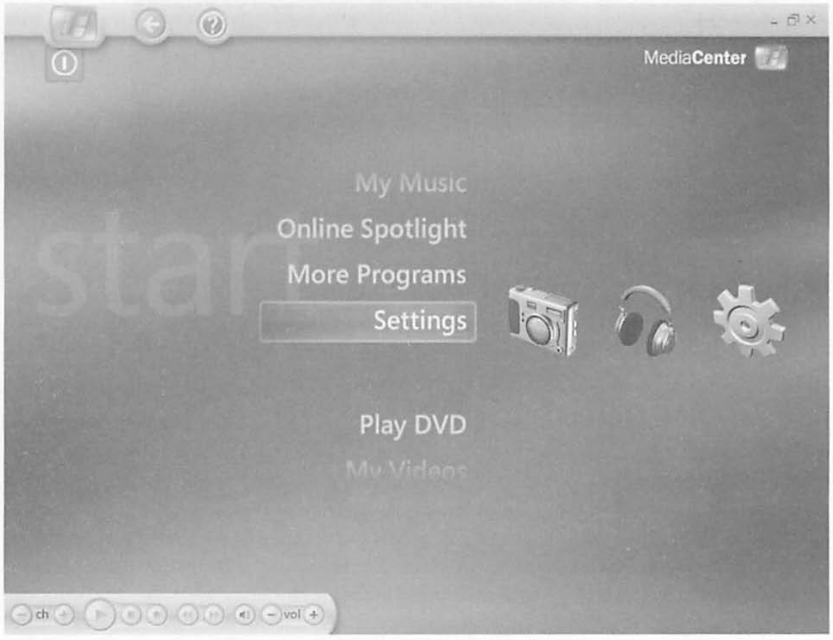


Figure 4-4: When you move the mouse, navigation and on-screen controls appear.

Clicking a menu item navigates you forward. The menu items appear in the center of the screen and scroll as you move over them using the direction keys on the remote control or keyboard. The menu items cycle in a loop to speed navigation and also to add visual flair. Clicking on any of the menu items takes you to that experience.

Items on the Start Screen

The Start Screen, shown in Figure 4-5, has a number of items that set the stage for using the screens that follow. Let's take a look at each one.

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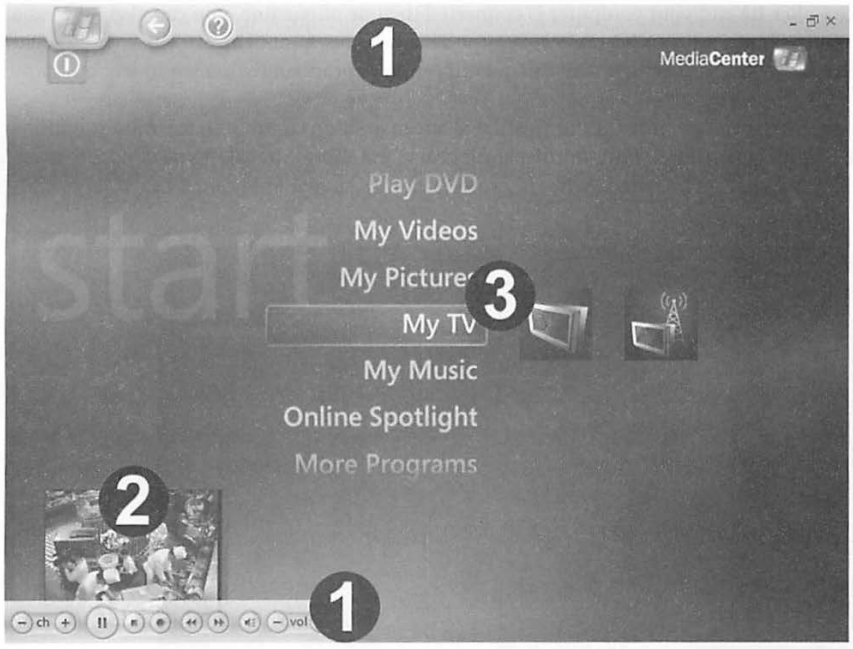


Figure 4-5: Main components of the Start Screen.

- **Area 1:** The top and bottom areas of the Start Screen provide navigation when you move the mouse. You can also use the Tab key on the keyboard or the direction buttons on the remote control to navigate within Media Center.
- **Area 2:** Features an Inset Window that shows currently playing media. When you first enter Media Center this window will not be displayed. Once you start playing virtually any media (TV, recorded TV, videos, DVDs, music, or radio) and navigate from screen to screen, including the Start Screen, the Inset Window will be present. If you click on the Inset Window it takes you to a full-screen version of the media that is playing in it or take you to the menu to control it.
- **Area 3:** The Main Menu always includes buttons for the major experiences, including My TV, My Video, My Music, My Pictures, Play DVD, and Radio if your system is equipped with an FM tuner. In addition there are permanent buttons for Settings, Online Spotlight, and More Programs. Once you use the More Programs menu to launch third-party experiences, the menu will also include buttons for the two most recently used third-party experiences. With nine to ten buttons and only about five of them viewable on a non-scrolling screen, using the direction keys or the mouse will scroll the menu items. As you scroll through the buttons a visual representation of the selection appears to the right of the button. A TV appears for My TV and a camera appears for My Pictures.

All of these areas are featured on the Start Screen when viewing it full-screen or resized to a window on the Windows XP desktop. The desktop controls that appear when you move the mouse will also appear in full-screen or windowed mode.

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If you have Caller ID and your computer is connected to your phone line, you can also set Media Center to provide phone call notification on-screen. This requires a modem card in your PC that supports Caller ID. When you get a phone call, a notification appears on the screen to let you know you have a call.

When you adjust the volume from the keyboard, on-screen desktop controls, or the volume buttons of the remote control, an on-screen volume display appears for a short interval. If you choose to mute the sound, a symbol appears on-screen with the word "Mute" as shown in Figure 4-6.

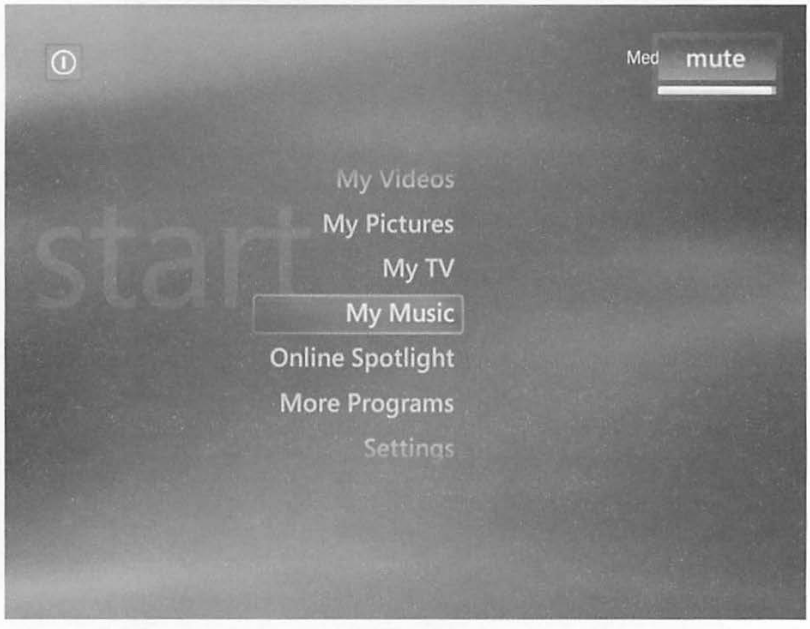


Figure 4-6: The Mute symbol appears as long as the sound is muted.

Media Center Experiences

Once you are familiar with the Start Screen and become comfortable with navigating, you're ready to visit the experiences that come with Media Center.

Each program is explored in great detail later in the book, but for now we will take a look at all of the experiences and highlight their features.

My TV

Media Center PCs are all equipped with TV tuner cards that enable you to view and record TV programs. My TV is the area where you view TV programs, search for them using a Program Guide, and schedule and replay recorded shows. The My TV menu is shown in Figure 4-7.

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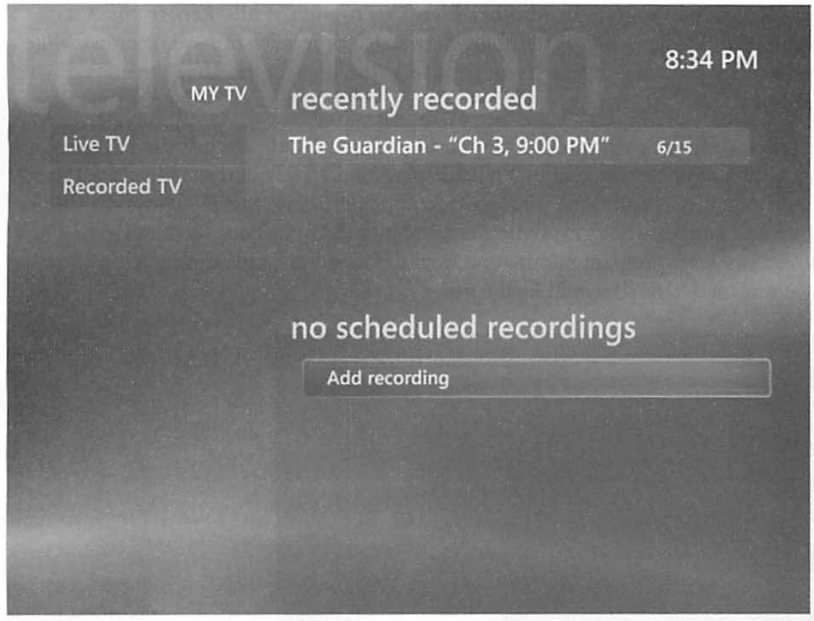


Figure 4-7: The My TV menu.

Using My TV will change the way you think of watching television. By combining the power of a personal computer with TV viewing, Media Center adds new features and controls to the experience. The most important new features are as follows:

- **Digital Recording:** You can record TV programs to your computer's hard drive. This allows you to schedule recordings or to record the program you are watching. The TV programs are stored as files on your computer; you can also store them on DVDs using a third-party application.
- **Pausing and Replaying:** When you are watching live TV you can pause and rewind up to 30 minutes of the program, allowing you to "time shift" your TV viewing. Media Center is always recording live TV so it's easy to pause, walk away or answer a phone, and then come back to the same spot in the program and continue watching. You can rewind, fast forward, or jump back to live TV at any time. Another nice feature is that if you are watching a program and 20 or so minutes into it you say to yourself, "Hey, I should have recorded this!" you can. Just rewind to the start and hit Record. It will start recording from that point.
- **Program Guide:** As an owner of a Media Center PC you have access to an on-screen Program Guide to view information about TV shows. The guide helps you plan your viewing and plays an important role in scheduling recordings. Searching with the guide allows you to find shows by title, genre, or keywords. You can even customize the guide to filter only the types of programs you like.

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- **Watching a Recorded Program or Another Live TV Program While Recording:** A nice feature included in Media Center is the ability to watch a program you have recorded while recording a live TV program, or watch another live TV program at the same time if you have dual tuners on your PC.

Recording and "time shifting" combined with a robust Program Guide are just the beginning of the features. Media Center supports standard 4:3 ratio displays and 16:9 widescreen displays. Picture quality on computer monitors is enhanced through video de-interlacing. My TV allows the display of closed captioning and supports Second Audio Programming (SAP) in both the live viewing and recording modes. You can view program information from the Program Guide during a live show or even once you have recorded it, as shown in Figure 4-8.

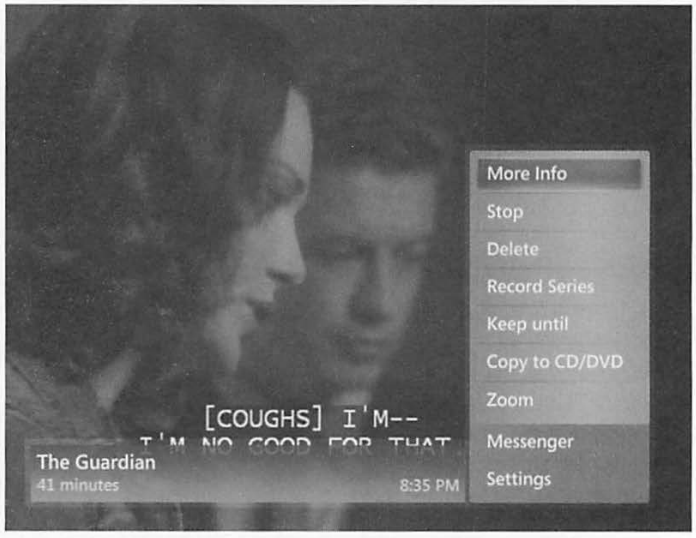


Figure 4-8: Program information and file options are displayed over a recorded TV show.

Once you begin using your Media Center PC for TV viewing, you'll learn that you no longer have to be a slave to real-time TV schedules. Through scheduling the recording of your favorite shows or by simply being able to time-shift while watching a live TV show, you have the freedom to watch TV when you want rather than when a program is on.

My Music

Playing music on a PC is not new, but Media Center makes it easier than ever. If you have been using Windows Media Player on your PC, you will be ready to put all of your music to work in Media Center.

Whereas the user interface of Windows Media Player is very "computer-like," My Music is very TV-like. The user interface is very similar to using a Program Guide and it is very visual. Music files are presented in an on-screen grid and are easily organized to match the way you like to find music. If album art is available, it is displayed while searching or playing, as shown in Figure 4-9 (note the recorded show playing in the Inset Window).

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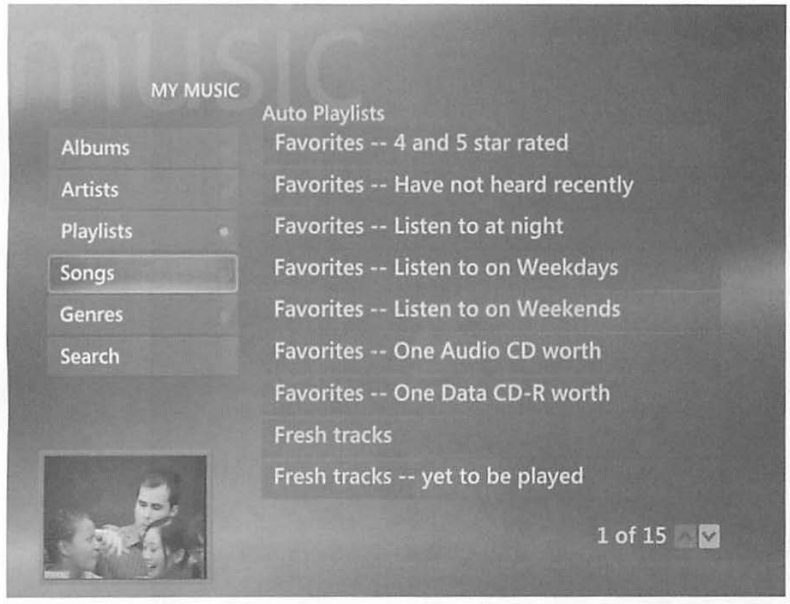


Figure 4-9: The My Music menu.

When you choose My Music from the Start Screen you arrive at the menu shown in Figure 4-9. Media Center is full of nice touches, such as using album covers floating in the background while listening to music and showing visualizations. At this point you have a number of choices for navigating to music.

The left portion of the screen lists the ways in which you can view your music library: by album, artist, playlist, song, or genre. In addition to the views, you can search for a song by the same criteria. Figure 4-10, for example, shows music sorted by album.

When you have found the music or playlist that you want, you can use the remote control, keyboard, or mouse to play, pause, or move between tracks. This is one of the areas where Media Center shines—you get to use a remote control to navigate and make volume adjustments. Just like watching TV, music is something better played in a relaxed setting—not hunched in front of a computer monitor.

In addition to the music stored on your PC you can just as easily listen to an audio CD or MP3 disc. Pop one into the CD-ROM or DVD drive of your Media Center PC and it begins playing in Media Center My Music. If you want you can capture the disc to your hard drive directly from Media Center.

Continuing with the highly visual user interface found in all of Media Center, My Music uses visualizations, as shown in Figure 4-11. You can display the information about the track playing, as shown in the figure, or have the visualization go full-screen without any information displayed.

My Pictures

One look at the My Pictures screen shows how consistent the user experience in Media Center really is. If you didn't look close you might think you're still at the Albums view in My Music. Using the files and folder metaphor used throughout Windows XP and in Media Center, getting to your pictures is quick, easy, and highly visual, as shown in Figure 4-12.

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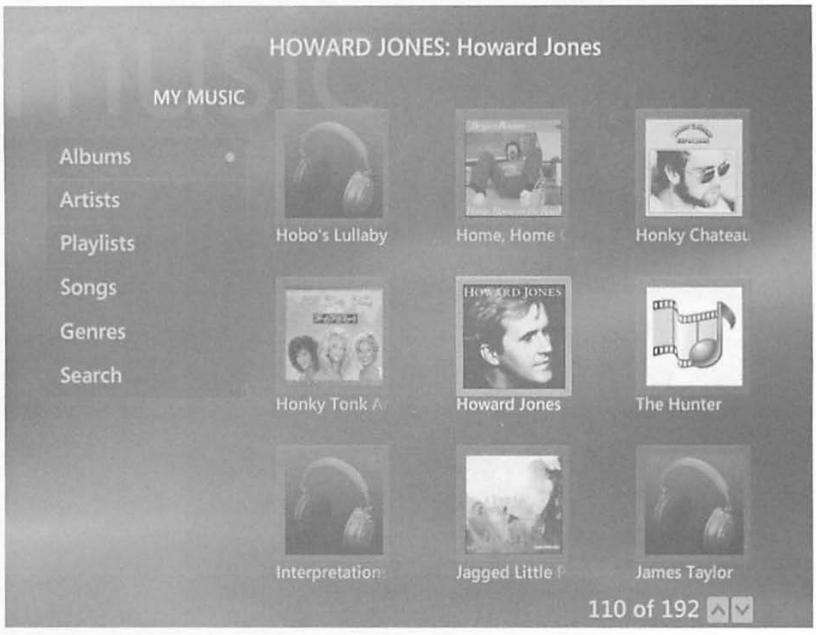


Figure 4-10: Album view of the music library.

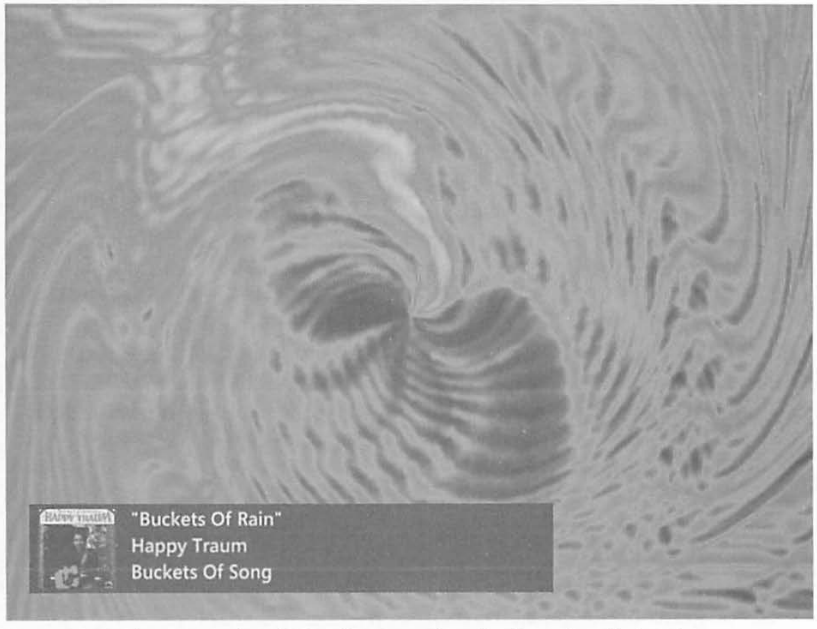


Figure 4-11: Playing a track with Visualization and track information displayed.

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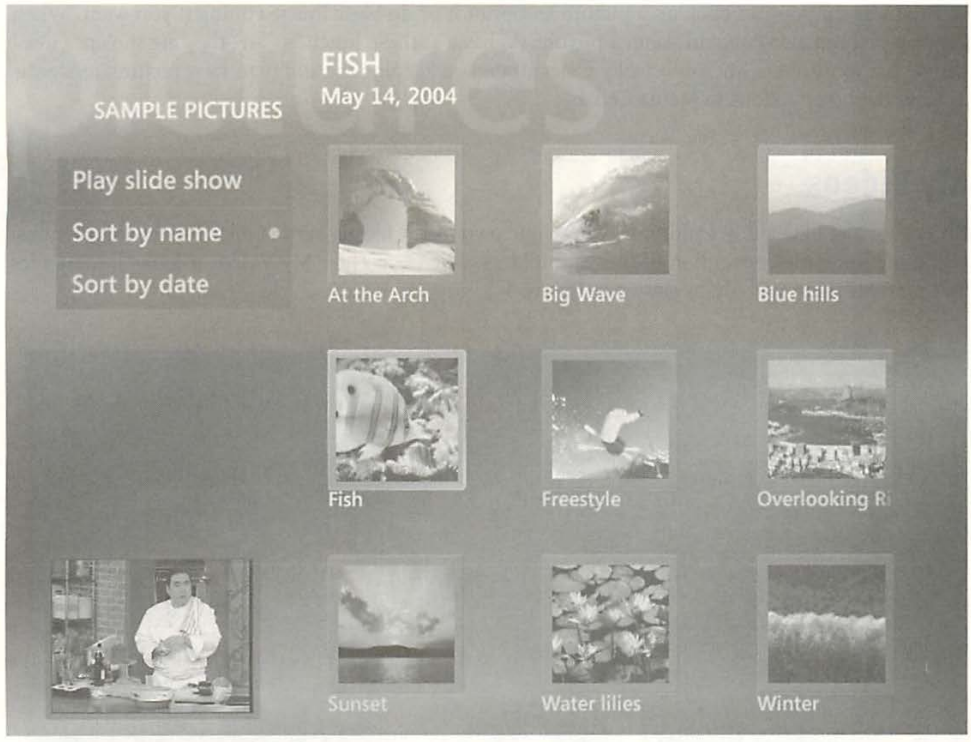


Figure 4-12: The My Pictures menu.

My Pictures allows you to view your digital picture files one-by-one or in a slideshow. The pictures can be stored on your hard drive or other media such as a CD-ROM or media storage card from your digital camera if one is connected to your computer. You can also print your pictures and do some very basic photo editing directly within My Pictures.

The viewing process is simple and intuitive. When you enter My Pictures you are immediately presented with a files-and-folders view of any files you have selected to be displayed in Media Center.

There are two basic "viewing" modes: by name or by date. If you are like many people using digital cameras, your photos have names that the camera created, such as `00000231.jpg`. The files are usually dated as well. You can go in and name the picture files or simply name the folders to help you navigate to the files you want.

Once you have picture files on the screen you can click on any of them and the image will fill the screen. If you have opened a picture from a folder of pictures, you can use the direction buttons on the remote control or the direction keys on the keyboard or screen to advance or go back to other pictures in the folder.

You can also play the files in a folder as a Slideshow. Media Center has great animation for slideshows—very TV-like movements and transitions. The slides are played in the order they are being viewed in or in a random order. You can't customize the show. You can use music from My Music as a soundtrack although it is not synchronized to the show in any manner. Slideshow settings are adjustable for duration and types of transitions.

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At any point you can click on a picture and print it or do basic image editing if you want. When viewing you can also pan and zoom a picture. As basic as these functions are, they are the ones most people use most often; Microsoft really concentrated on keeping the ability to view pictures as simple as all of the other actions in Media Center.

My Videos

Except for the Slideshow feature, viewing your own video files is very similar to viewing pictures. Using the same file convention of files and folders, when you enter My Videos it looks for any files and presents them visually, as shown in Figure 4-13.

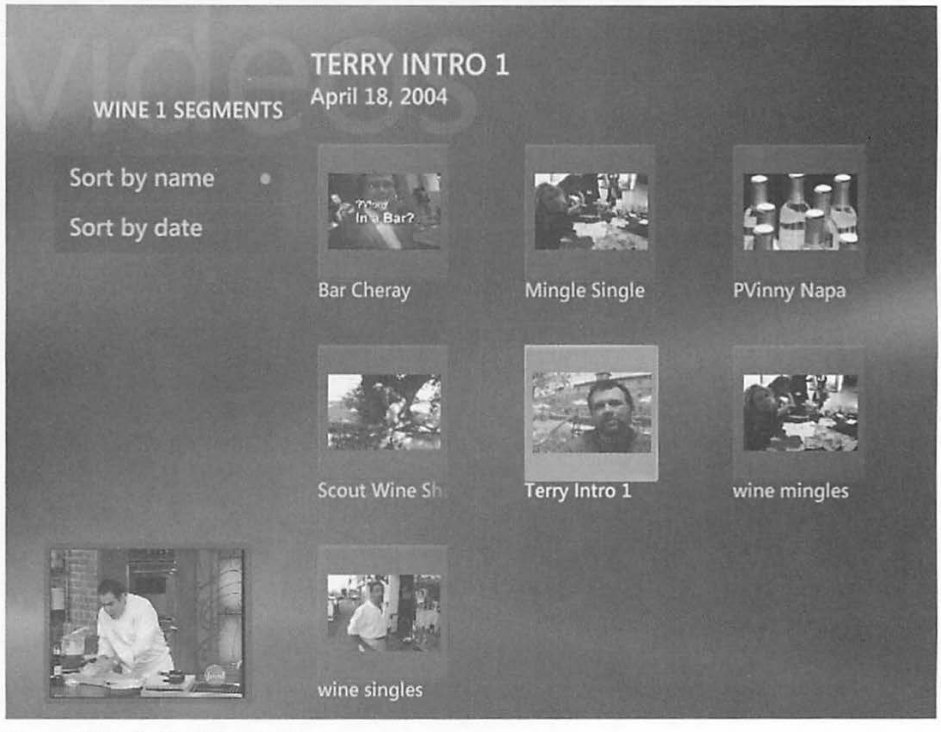


Figure 4-13: The My Videos menu.

Video files can be displayed by file name or date, and you can also view videos directly from a video camera that is attached to your computer. Viewing a video is as simple as clicking on it to start and then using the standard controls to stop, start, forward, or rewind it. Volume is controlled from the remote control or keyboard.

If you have named the file, pressing the Info button on your remote control presents file information about the video, as shown in Figure 4-14. This looks exactly like Program Guide information overlaid on a TV show—Media Center keeps all information displays consistent.

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Figure 4-14: File information displayed over a video.

My Video plays videos but does not provide any video-editing or creation tools. You can use Movie Maker 2 or any third-party video-editing program.

Play DVD

Just as simple as playing music or home videos, watching a DVD requires only that you put a DVD into the drive. The AutoPlay feature of Media Center starts the DVD playing just like a home DVD player. Unlike other Media Center experiences, there is no Play DVD "menu." If you click the Play DVD button on the Start Screen and no DVD is in the drive, you get the message box shown in Figure 4-15.

Once you start playing a DVD all of the standard Media Center controls apply, but there are additional ones that are specific to DVD playing. For example, pressing the DVD Menu button on the remote control brings you to the DVD's menu of features.

Beyond the DVD's own features, Media Center uses its own parental controls for access to DVD content. You can also display DVD information at any time when you are viewing a DVD by pressing the More Info button on the remote control.

Radio

If your Media Center PC is equipped with an FM tuner, the "Radio" button appears on your Start Screen, as shown in Figure 4-16. If it does not appear, that means that your tuner card does not support FM radio.

If you have an FM tuner you will enjoy the way Media Center treats radio like a TV program. For example, you can time-shift. That means that while listening you can pause, rewind, and fast forward back to live radio. The only difference with radio is that you can't record the radio broadcast.

You can set station presets and store your favorites. The station presets are established in the Radio Settings menu and setting one is as simple as seeking or tuning to a station and then setting the preset by clicking Save.

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Figure 4-15: Message shown when starting My DVD without a disc in the drive.

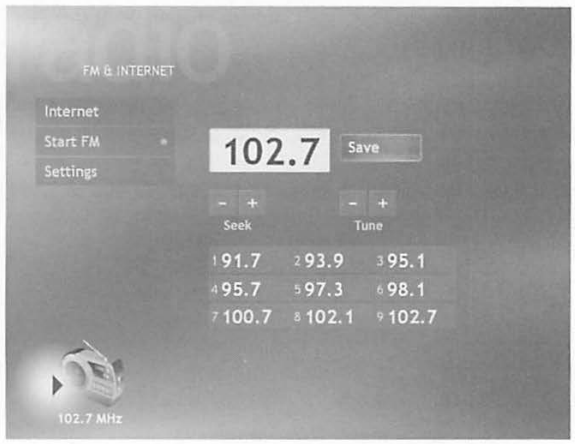


Figure 4-16: If you have an FM tuner on your TV tuner card, you can listen to FM broadcasts.

In addition to FM radio broadcasts from an antenna, you can also listen to Internet radio stations, as shown in Figure 4-17. This requires a connection to the Internet and is best if you have a broadband connection. You can establish Internet radio presets from the next application in Media Center, Online Spotlight.

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Figure 4-17: Listening to Internet radio stations.

Online Spotlight

There is a large amount of media content on the Internet, but not all of it works correctly with Media Center. As a TV-centric environment you would not be able to use, or even see, much of the text and images from a standard Web site. For that reason, Media Center uses the Online Spotlight area to direct you to Web sites and content that is designed to work in Media Center. Figure 4-18 shows the first screen you see when visiting Online Spotlight.

You must have an active Internet connection to use Online Spotlight. Since most of the content areas feature music or video, a broadband connection works best. The content areas featured in Online Spotlight are primarily music and movie rentals or purchases, FM radio stations, and news from MSN TV Today. There is also a selection of hints and tips about using Media Center and links to third-party software for Media Center. All areas feature the look and feel of Media Center experiences and use the same style of navigation.

Some of the sites featured in Online Spotlight include the following:

- Live365.com to listen to Internet radio stations and add them to your radio presets.
- CinemaNow for previewing movies and renting movies to view on your computer.
- Napster for online music listening and to purchase songs and albums.
- MSN TV Today for news headlines. (See Figure 4-19.)

The only way to reach the Media Center versions of the Web sites featured is through Online Spotlight. If you want to visit other Web sites you will need to return to Windows XP and use a standard Web browser.

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Figure 4-18: The Online Spotlight menu.

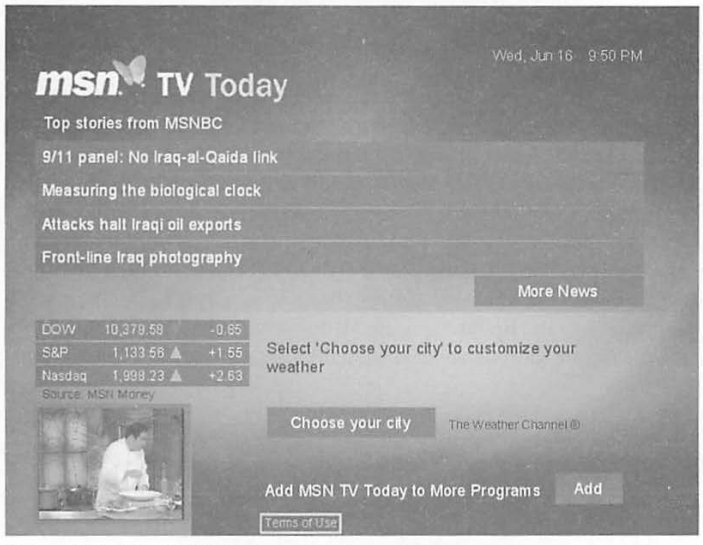


Figure 4-19: MSN TV Today features news and weather content.

More Programs

You can add additional programs to Media Center if you choose. Programs can come from Microsoft or from a variety of third-party sources. At the time of writing this book there were more than 150 companies working on programs designed for Media Center.

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More Programs, as shown in Figure 4-20, is where you jump to programs that you have added to Media Center. Programs can be added by installing them from a CD-ROM, from Online Spotlight, or even from the provider's Web site. Depending on your computer manufacturer, your system may have come with a few additional programs such as Otto or Gem Master.

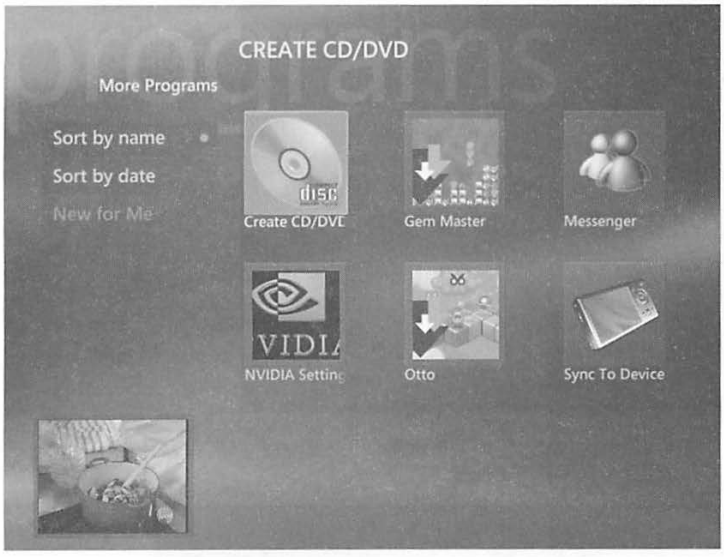


Figure 4-20: The More Programs menu.

For any program to be included on More Programs, it must have been developed specifically to work in Media Center. It must use the same TV-centric user interface and be controlled using a keyboard, mouse, or remote control.

Settings

The last menu item on the Media Center Start Screen is Settings, as shown in Figure 4-21. All of the settings from each area of Media Center (TV, music, pictures, DVD, and general) can be reached from this menu. You can also reach settings specific to an area directly from it (you can reach TV settings from the My TV menu, for example).

Media Center Messenger

From any experience in Media Center, regardless of what you are doing, you can communicate with people who are online using Messenger. Media Center Messenger is an instant messaging application that enables you to send short messages to people who are currently online—regardless of whether they are using Media Center or a standard PC—as long as they are on the Messenger service at that time. You will need to have an active connection to the Internet to use this feature.

You need to create a Messenger account (all that is required is an e-mail address) and enter your account name and password the first time you use it. After that, as shown in Figure 4-22, by pressing

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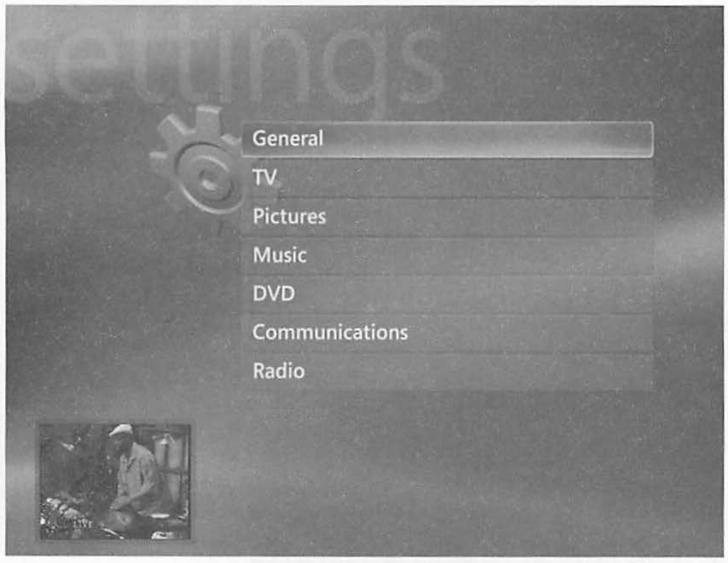


Figure 4-21: The Settings menu.

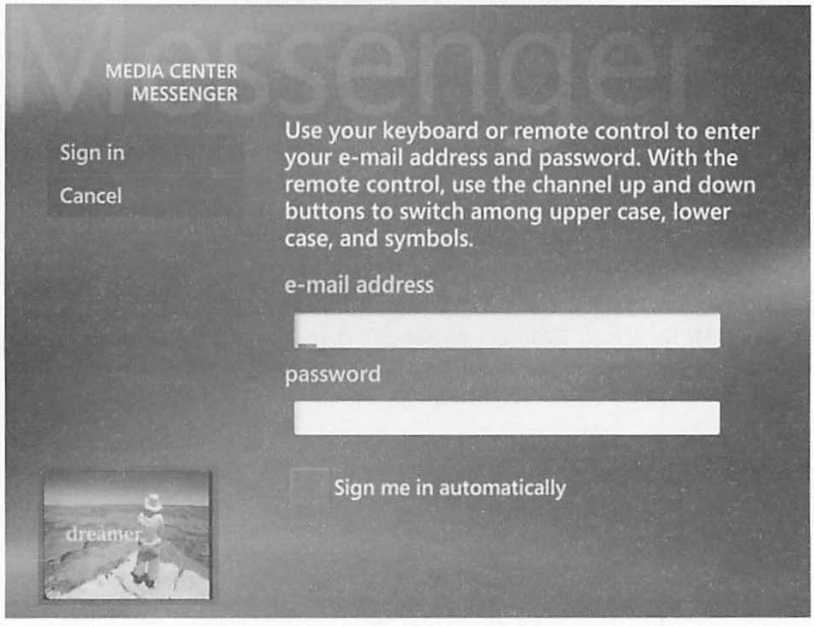


Figure 4-22: Starting a Media Center Messenger session.

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the Info button on the remote control or right-clicking the mouse, you can select to use Messenger from an on-screen menu and begin sharing notes about what's on TV or anything else you wish to chat about.

On-Screen Caller ID

If you have your phone line connected to your Media Center PC and you subscribe to Caller ID or Caller ID with Name from your telephone service provider, you will be able to view calls while using Media Center, as shown in Figure 4-23. When you receive a call, an overlay menu appears in the upper-right corner of the screen, regardless of what part of Media Center you are using, such as watching TV or DVDs. Media Center displays the name or number of the caller. This is a great feature and helps you decide if you want to pause what you are viewing or listening to and take the call. To set up on-screen Caller ID, go to the Settings menu from the Start Screen, choose Messenger and Caller ID, and then Caller ID. You can turn this feature on or off at any time from this Settings menu.

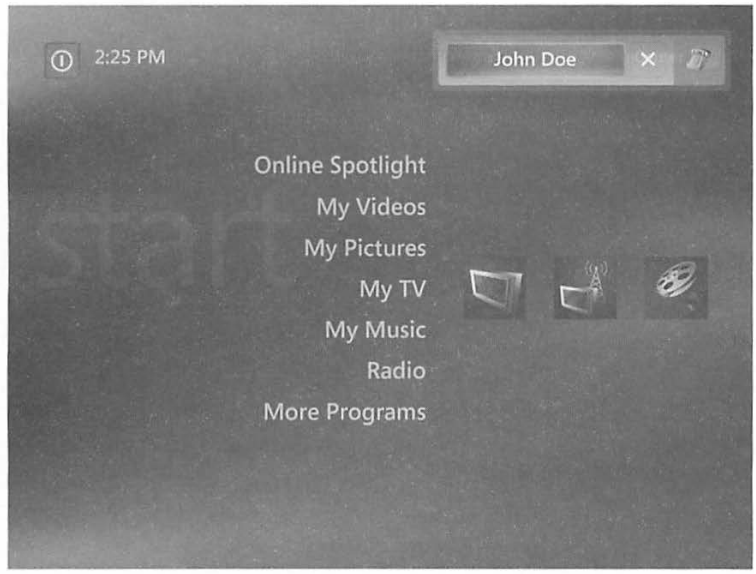


Figure 4-23: Telephone calls can be displayed on-screen by using Caller ID notification.

Summary

Media Center comes complete with all the experiences you will need for watching and recording TV, listening to music, playing videos and DVDs, and viewing pictures in a slideshow. All of the experiences share the same user interface and controls and are easily reached from the Start Screen of Media Center.

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Additional programs and content can be reached using Online Spotlight, which uses the Internet to reach Web sites and content that has been designed to work with Media Center. Once additional programs have been added, you can reach them from the More Programs button on the Start Screen.

You can easily share TV and other experiences by using Messenger any time you are using Media Center as long as you are connected to the Internet.

With a strong set of media experiences and the ability to add programs and content from the Internet, Media Center comes with all of the features you need to play and manage your media library.

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Part II

Media Center Edition PCs and Devices

Chapter 5
Choosing the Right Media Center PC

Chapter 6
Getting Audio and Video In and Out of Your MCE PC

Chapter 7
Media Storage: Adding and Replacing Drives

Chapter 8
Home Networks and Media Center Extenders

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Chapter 5

Choosing the Right Media Center PC



By all appearances, a Media Center PC looks just like any other high-end PC. In fact, it's possible to configure a standard PC to include the same hardware for TV viewing and recording plus all of the audio and video functions found on Media Center PCs. Even configured with the same hardware, a standard PC would not be a Media Center PC; it's the Windows XP Media Center Edition Operating System that makes it special.

Media Center PCs are unique in many ways and offer advantages that make them worth their price. This chapter takes a look at what makes a Media Center PC different from a standard PC for media applications and how to find the right Media Center PC for your lifestyle.

Standard PCs versus Media Center PCs

Microsoft has taken a different approach to offering its Windows XP Media Center Edition operating system to users than with previous versions of its operating systems. Microsoft operating systems such as Windows XP Home Edition or Windows Me were most often sold preinstalled on PCs. Once you had a computer with Windows on it you could also buy upgrades to new versions of Windows or purchase Windows to install on computers you built and assembled.

That is not the case with the Windows XP Media Center Edition operating system; it's only available on PCs that are sold as complete systems meeting hardware performance and configuration requirements established by Microsoft for the purpose of acting as your media center. You won't be able to buy it as an upgrade to an existing version of Windows; you need to purchase a PC configured to those requirements with the Windows XP Media Center Edition operating system installed.

The benefit to you is that when you purchase a Media Center PC it has everything you need right out of the box. In addition to an operating system designed to act as a TV-like experience, the hardware in the PC offers the correct level of performance for the demands of getting video in and out of the PC as well as storing it.

Windows XP Media Center Edition combines a standard Windows XP Professional operating system for general computing with a special operating system for viewing and controlling media called Media Center (shown in Figure 5-1).

The Media Center operating system integrates a number of experiences and system-level functions. It creates a consistent and understandable way of working with media files such as TV programs, video, pictures, and music. The controls are the same whether you're viewing a home movie, watching TV,

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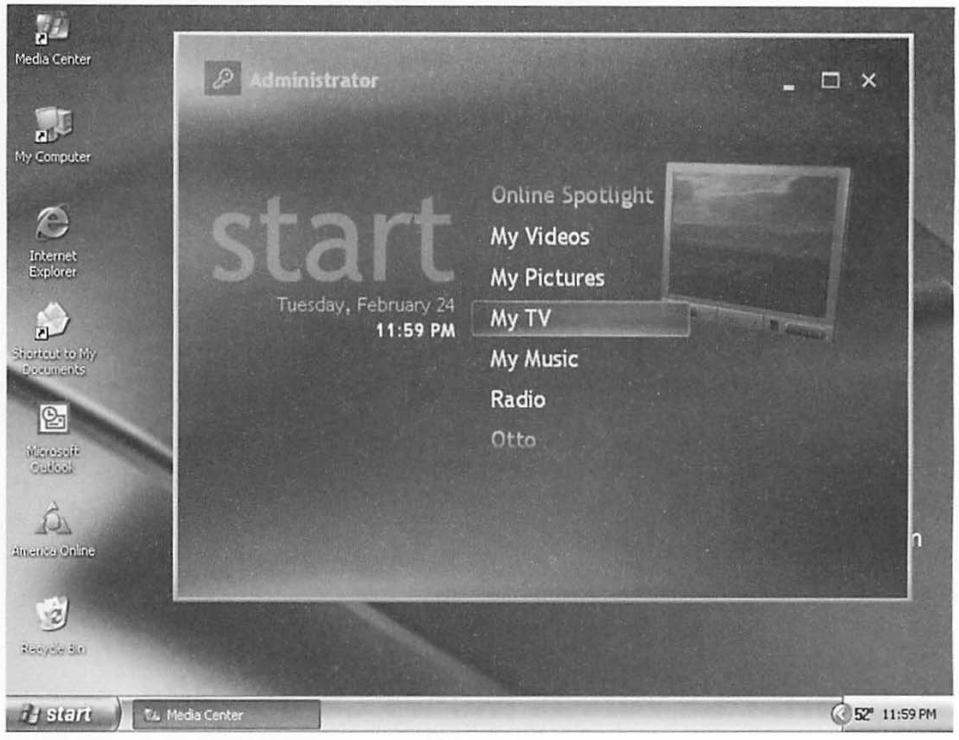


Figure 5-1: Media Center running in a window on the standard Windows XP desktop.

playing music, or looking at pictures; they can all be managed using the same actions and commands from one keyboard, one mouse, or one remote control.

That level of integration is not possible using different applications on a standard PC—even if you had the same hardware that is found on a Media Center PC. Again, it's the Media Center operating system that brings all of the hardware and software together into a user experience that makes sense.

Media Center PC Hardware Requirements

In order for a PC to use the Windows XP Media Center Edition operating system it must include the following hardware:

- A Media Center–compatible remote control if your PC comes with a TV tuner.
- A remote infrared (IR) sensor that communicates with the remote control if your PC comes with a TV tuner.
- A remote IR controller to control your cable or satellite set-top box if your PC comes with a TV tuner.

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- A high-performance graphics card capable of displaying TV and video on a computer monitor.
- A TV output port to display Media Center on a standard TV.
- Digital audio output to send digital audio from your computer to an existing home entertainment system.

Most all Media Center PCs are also configured with TV turner cards, either single or dual, that do the following:

- A TV tuner card, single or dual, that can display television signals from a cable, satellite, a connected video source such as a VCR, or an antenna source.
- A hardware encoder that enables recording of TV shows from cable, satellite, or antenna to the computer's hard disk.

In addition, Media Center PCs are required to offer the following hardware features:

- Mid- to high-end processors
- Enough memory for both computing and entertainment applications
- High-capacity hard disks
- CD-ROM/DVD drives
- Advanced graphics and audio capabilities
- Networking connectivity

The last six items are where the various Media Center PCs on the market differ. Media Center PCs are available with a range of processors including AMD and Pentium running at various clock speeds. Hard drives range from 80GB to very large drives such as 250GB. Some are sold with DVD drives that only play DVDs and others with drives that allow you to record your own DVDs and CD-ROMs.

Media Center PC Hardware Differences

Although Microsoft put requirements on the hardware for Media Center PCs, it also gave enough latitude to manufacturers to allow a range of prices and configurations. For example, although the operating system can support a TV tuner, it is not a hardware requirement.

Because there can be differences in various Media Center PCs, the following sections detail each component in a Media Center PC system and how it affects the overall Media Center PC experience.

DIFFERENT PROCESSORS AND RAM

Like any PC on the market, Media Center PCs are available with different processors. At any point in time the fastest processors on the market will cost you the most, so the question becomes is a faster processor worth the extra money?

Most Media Center PCs are sold using Pentium 4 processors, and just about any clock speed will work well. For example, I've tested both a Pentium 4 2.6-GHz unit and a 2.8-GHz unit; both performed exceptionally well in all Media Center applications.

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Media Center was designed to work correctly on computers that have been available for more than a year now, so processor speeds have begun to exceed the original requirements. Because processor speeds keep increasing, it's important to consider whether a faster processor will have value in your traditional computing applications.

The use of video—displaying TV and videos—is where a lot of processing power is required. Luckily, that processing if offloaded to the video card, so it is important to get a Media Center PC that is equipped with the best video card possible.

RAM is also a big part of the performance of your PC. Currently RAM configurations in Media Center PCs range from 256MB to 2GB.

Tip

You can expand your RAM in the future but a good starting point is to purchase a Media Center PC with at least 512MB of RAM.

DIFFERENT HARD DRIVES

If you plan to do a lot of recording of TV shows and put all of your music on your Media Center PC, you should consider two things in regard to hard drives: the size of the drive that comes with the machine and whether you can add an extra internal hard drive.

Media Center PCs started being marketed with drives as small as 80GB, and you can configure them with extremely large hard drives such as a 250GB drive. The rule here is simple: Get the largest drive for the money that you can. Video and music files (plus the ever-larger files being created with multi-mega pixel digital cameras) are large compared to virtually anything else you will store on your PC, so bigger is definitely better. Table 5-1 shows approximately how many hours of TV programs can be recorded (at different quality levels) using a 120GB hard drive.

Table 5-1 Recording Times at Different Quality Settings

Recording Quality	*Best*	*Better*	*Good*	*Fair*
Hours of Storage	46	54	66	122

Drive speed is also an import consideration. Look for 7200-RPM drive speeds and shy away from the slower 5400-RPM drives if possible. Long videos play best with faster drives and they will often offer larger file buffers (8MB file buffers would be the best choice).

Even with a large hard drive you may find yourself wanting even more storage. You have two choices when expanding: Add a second internal hard drive (if there is a bay in your PC for it) or add an external hard drive.

The least expensive and most elegant way is to add an internal hard drive. Because external drives require a case and a power supply, they will cost more. Again, the rule is to get a large, fast drive whether internal or external. In a living/family room setting you will probably not want to have a lot of "add-ons" such as external hard drives laying about, so the internal drive may be the best option for such settings.

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External hard drives come in two versions: FireWire/IEEE 1394 and USB 2.0. Your Media Center PC can work with either since it will have both FireWire/IEEE 1394 and USB 2.0 ports. Currently USB 2.0 is the faster of the two so that may be the best choice. Some external drives have both FireWire/IEEE 1394 and USB 2.0 connections but you may have to pay more for them.

With the ability to add hard drives—and with drive prices getting lower by the day—you'll have the option of building your storage as needed. The best deal is generally to get the largest drive possible when you buy your computer. It usually costs more to add a drive than if it comes installed at the time of purchase.

DIFFERENT OPTICAL DRIVES

Media Center PCs can come equipped with a variety of optical drive configurations, as shown in Table 5-2.

Table 5-2 Optical Drive Configurations

Type	*Plays*	*Records*
CD-ROM	Audio CDs, Data CDs	Does not record
CD-RW	Audio CDs, Data CDs	Audio CDs, Data CDs
DVD	DVDs, Audio CDs, Data DVD/CDs	Does not record
DVD-R/-RW	DVDs, Audio CDs, Data DVD/CDs	-DVDs, Audio CDs, Data DVD/CDs
DVD+R/+RW	DVDs, Audio CDs, Data DVD/CDs	+DVDs, Audio CDs, Data DVD/CDs
DVD+/+RW/-R/-RW	DVDs, Audio CDs, Data DVD/CDs	-/+DVDs, Audio CDs, Data DVD/CDs

Depending on the form factor, it may come with one or two optical drives. A typical example of a two-drive configuration is one CD-ROM drive and one DVD recording drive. Media Center PCs come with at least one DVD drive for viewing DVDs, but most are offered with DVD recording drives.

DVD-R or DVD+R drives enable you to record your own DVDs that can be played on your Media Center PC or most regular DVD players. They can also record data DVDs and CDs, audio CDs, and MP3 discs.

Many Media Center PCs come equipped with a DVD recording drive and a second CD-ROM drive. High-end systems feature two DVD recording drives, which allows quick and easy copying of DVDs.

DIFFERENT VIDEO CARDS

One of the most important components in a Media Center PC is the video card. It drives your computer monitor, TV, or both. It processes virtually everything you see on the screen and manages how well video looks on a display.

Like the processor that powers your computer, the video card is a small computer in its own right. It has a processor and memory and both will affect performance. Just as with processors and all the other components in a Media Center PC, a variety of video cards are offered and they affect the price of the system.

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Video cards process all of the visual information that you see either on your computer monitor or TV. For Media Center PCs, they must be capable of delivering high-quality video on computer monitor resolutions ranging from 640 × 480 to high resolutions such as 2048 × 1536. They must also be capable of sending flicker-free video to a TV.

Currently, most of the video cards in Media Center PCs are from Nvidia or ATI with high-performance processors. All cards that come with a Media Center PC must meet minimum requirements for displaying TV images on either computer monitors or TVs, so most all will do a good job for basic TV viewing and PC use.

Although it is required that the video card allows connection to a standard computer monitor using a VGA 15-pin adapter and to a TV using both composite (RCA-type) and S-Video connections, there is one connection that you should look for and choose if possible: a DVI (digital video interface) connector.

A DVI connector on your video card enables you to connect your Media Center PC to the next generation of computer monitors—and the next generation of LCD, plasma, and high-end TVs. This connection is designed to interface your computer with both digital and analog displays.

When connected to an analog monitor, the DVI connector takes the digital signal from your computer and converts it to an analog signal. If the display is digital, such as a digital LCD, it delivers a digital signal. If you are thinking of upgrading to a flat panel TV such as a plasma or LCD, be sure that the TV has this connection too.

In addition to the basic connections, most video cards have software utilities that allow you to manipulate TV video, including color, contrast, size, position, and flicker controls.

DIFFERENT TUNER CARDS

A TV tuner card is what brings in your TV source. The source can be just about any TV signal, including off-the-air broadcasts from a TV antenna or the analog signal from your cable or satellite set-top box.

As the name implies, a tuner card does more than just bring the video signal in—it also enables you to "tune" to channels. This function allows your Media Center PC to act just like your TV. The ability to change channels and use a TV source is also important for scheduling and recording TV programs. Your PC may have a video card with a TV tuner built in, or a separate video card and TV tuner card.

TV tuner cards also perform a very important processing function: they take the TV signal, which is analog, and convert it in real time to a digital signal. Once the tuner card has converted the TV signal into a digital format your computer can do a lot with it, such as display it on your computer monitor or TV and record it to your hard drive.

Although most Media Center PCs have a TV tuner card for this purpose, there is one option you will want to look for that is not part of the Media Center PC requirements: an FM tuner.

If your TV tuner card has an FM tuner as well, you will be able to use the Radio features of Media Center. Just as with TV tuning, an FM tuner enables you to connect an FM antenna and tune to different local FM radio stations using your Media Center PC. My suggestion is to purchase a system with an FM tuner as part of the TV tuner card to get the most value and enjoyment from your Media Center experience.

Figure 5-2 shows a typical set of connectors on a TV/FM tuner card. In addition to the connectors on the back of your Media Center PC, you might also find an additional set of S-Video and RCA composite video and audio connectors on the front of your Media Center PC. This makes it easy to connect a VCR or analog camcorder once your Media Center PC is in place.

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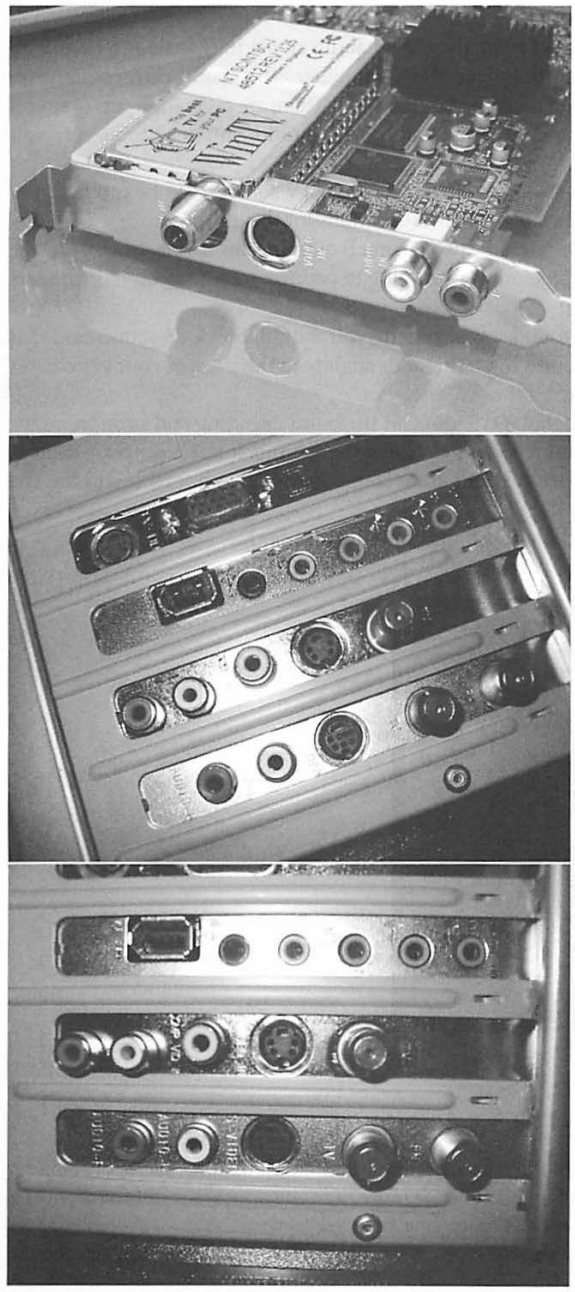


Figure 5-2: FM, coaxial, S-Video, composite video, and audio connectors on a TV tuner card.

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DIFFERENT SOUND CARDS

The sound card in your Media Center PC converts the digital audio signal into analog to be played on either amplified speakers or through a traditional stereo amplifier. The sound card contains no amplifier, so wattage, speaker size, and so on are not considerations. There are different levels of sound cards and, based upon how you like to listen to music and hear TV audio, you need to be sure you get the right one.

The sound card also allows audio signals—including audio from TV sources—to be brought into your PC. All sound cards have Microphone and Line In connections for this purpose.

Less expensive systems feature standard "stereo" (two channel) output. This is fine for most music and TV audio and the card will have a simple mini stereo plug to connect to your powered speakers or amplifier/stereo.

If you plan to view DVDs or have a surround sound system, you should look for a sound card that has 5:1 surround sound processing and connectors. This adds slightly to the price of your system but offers the greatest set of audio options and features.

Media Center PCs can deliver Dolby Digital, DTS, or PCM surround decoding and support multi-channel output for speakers and connected A/V devices (using digital interconnect outputs, such as SPDIF or Toslink). If you want surround sound, look for a sound card that supports it and has the right connectors for your speakers or amplifier.

Figure 5-3 shows the connectors found on a surround sound audio card.

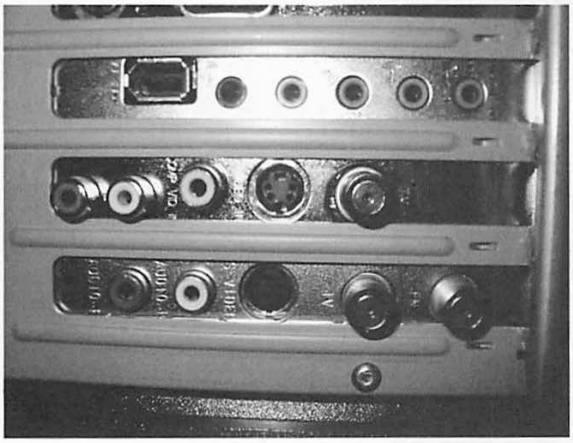


Figure 5-3: Connectors on the audio card.

DIFFERENT FORM FACTORS

As mentioned in Chapter 2, Media Center PCs can be purchased in various form factors. The *form factor* is the shape and size of the PC cabinet and controls more than the appearance of the device; it can also control the amount of hardware expansion capacity offered.

Currently there are five form factors: tower, desktop, cube, laptop, and all-in-one. You can see the how each compare in Figure 5-4.

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Figure 5-4: A comparison of form factors.

Two things to consider when thinking about the right form factor for your use are the following:

- **Style:** Where your Media Center PC will be used is an important consideration. An all-in-one unit where the monitor is attached as a part of the computer may not be best for family room use. A tower may not be the right form factor for entertainment centers designed for horizontal equipment.
- **Capacity:** Desktops and towers have enough room in the cabinet to have multiple DVD and CD-ROM drives, additional hard drives, and slots for expansion cards. Cubes, laptops, and all-in-ones limit how much equipment is available when you purchase it, and have limited expansion capabilities.

Price is also an important consideration. Major manufacturers such as Hewlett-Packard and Sony sell Media Center PCs at major retail outlets such as Best Buy or Circuit City. The models from Hewlett-Packard and Sony to-date have been tower models and represent an outstanding value. Ranging from $999 for a nicely equipped base model (lacking an FM tuner card and dual DVD burners, but having 512k RAM and a 120GB hard drive) to $2,400 for a fully loaded version, there is a price and model for most budgets if you can live with a tower. Recently the same retailers have begun to stock Media Center laptops from Toshiba and Hewlett-Packard.

If you don't mind buying mail order your selection really opens up. Mail-order retailers such as Northgate and Gateway sell a variety of form factors including desktops, all-in-ones, and laptops. Other mail order companies that custom configure PCs for you can build your Media Center PC in almost any configuration, including a cube.

Mail order retailers have models that run a bit higher in price but offer features and form factors not available in the mass-market machines sold at retail outlets.

DIFFERENT INPUT DEVICES

It always helps to get it right the first time—and when you do you save money. A good example is making sure that your get the right input devices with your Media Center PC.

The keyboard and mouse that come with your Media Center PC can be either wired or wireless. If you plan to use your Media Center PC in a living or family room setting, you will want to get a wireless keyboard and mouse.

If your Media Center PC comes with a wired set, you can replace them with a wireless set after you purchase your PC, but that will add about $100 for a good keyboard and mouse; it's less expensive

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to get your Media Center PC with the wireless configuration and then purchase an inexpensive wired keyboard and mouse for office use.

Media Center Remote Control

Now that you know what parts of a Media Center PC are different from system to system, you will be able to look for the configuration that meets your needs. In addition to the previously discussed differences, every Media Center PC equipped with a TV tuner comes with a Media Center Remote Control. It can be used to control the functions of Media Center—but it does not act as a mouse when used in the Windows XP operating area. Remotes from different companies may look different, but each contains the same set of controls, including connections to the Internet.

A Media Center Remote Control contains the following features:

- **Media Center Start Button:** Launches Media Center.
- **Standby Button:** Puts your Media Center PC in the power-saving standby mode or restores it to an active state.
- **Transport Controls:** Buttons for play, stop, pause, record, skip, rewind, and fast-forward at multiple speeds, and step forward frame by frame.
- **Replay:** "Instant replay" moves recorded TV and videos back seven seconds; it also moves items in a music playlist, CD, slideshow, or DVD chapter back one track.
- **Skip:** Moves to the next audio or video track or, when watching recorded TV, jumps ahead 29 seconds.
- **Directional Controls and OK Button:** Allow on-screen movement between selections.
- **More Info (or Details) Button:** Displays details about TV programs and media being played including show, album and song titles, artist names, and more.
- **Live TV Button:** Jumps directly to live TV from other functions or when you are paused or replaying portions of a TV program you are watching.
- **Shortcut Buttons:** One-step buttons to navigate directly to My TV, My Music, My Pictures, My Videos, Recorded TV, Program Guide (Guide), or DVD menu.
- **A/V Controls:** Channel up and down, volume up and down, mute, and a numeric keypad to directly enter tracks, channel numbers, or text.

Although the MC Remote Control is not a mouse, it's a pointing device when used in Media Center. Each on-screen area is actually a "button" that can be clicked by using a mouse or by using the directional controls and OK button on the remote control.

Your mouse will allow you to move, point, and click in both Windows XP and in Media Center. The remote control only navigates in Media Center, but you can jump directly to Media Center using the Media Center Start button on the remote control when in Windows XP.

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Figure 5-5 shows a typical Media Center Remote Control from an HP Media Center PC. It sends its signals to the Remote Sensor that comes with a Media Center PC. The Remote Sensor is a small device that connects to the PC via a USB connector and can be placed on or near the Media Center PC.

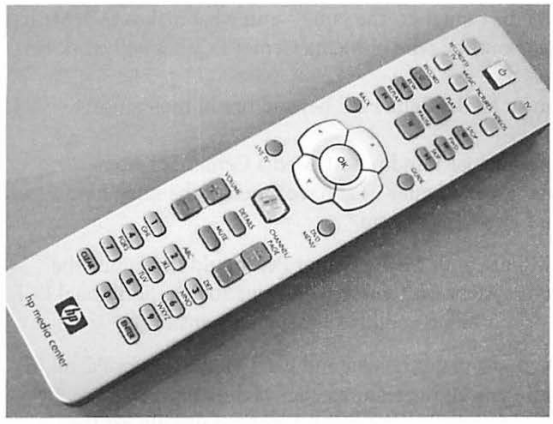


Figure 5-5: The HP Media Center Remote Control.

Network Connections

Access to a home network and the Internet are handled through two main connectors found on Media Center PCs: a modem jack and an Ethernet connector.

If you have broadband services such as DSL or a cable modem, you connect them to the Ethernet connector on your Media Center PC. This allows connection to the Internet and also to a home network that enables you to share an Internet connection and files on your Media Center PC with other computers and devices in your home.

You can also create a home network using the Ethernet port without having a high-speed connection to the Internet. Using a hub and wired or wireless networking equipment you can network your home system to share files and devices such as printers, and also access the Internet through a modem on another PC.

If you use dial-up service, your Media Center PC should come equipped with a 56k modem. Although slow, the connection will allow you to connect to the Internet to download TV listings and have access to online content designed specifically for your Media Center PC.

Whether high-speed or dial-up, you need to connect to the Internet for proper installation and ongoing use of your Media Center PC.

Cross-Reference

Chapter 8 shows how to create a home network using your Media Center PC as a media server.

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Final Considerations when Choosing a Media Center PC

Now that you've looked at what makes each Media Center PC the same—and what makes each Media Center PC different—you can begin thinking about the type of Media Center PC that will work best for you.

Here are some of the key points in choosing a Media Center PC beyond brand preference:

- **The Real Thing:** Make sure that it is an actual Windows XP Media Center PC. Some computers are being sold by the name "Media Center" that have much of the same hardware, but that do not have the Media Center operating system.
- **Form Factor:** How and where you will use your Media Center PC should determine the form factor. If you plan to expand your system with internal add-ons such as additional PCI cards or hard drives, make sure that the form factor allows for such expansion.
- **Value:** Although it may be easiest to go to a major retailer and get a Media Center PC off the shelf, it might not be configured to give you all the features you want or the best price. By custom configuring your system (most often by buying online) you can usually get the equipment you want for less than you would pay if you upgraded your system later.
- **Get the Latest Product:** Since its release, Microsoft has updated Media Center about once a year. Be sure you get the latest release of Media Center installed on your PC when you buy it. Although you can usually upgrade to the latest version at no cost from the manufacturer, it's best to start off with the latest release installed to save you the work. As with all computers, the latest systems tend to offer more features and value for a lower cost. Do some simple online research to make sure you are getting the newest hardware and software.

Summary

Every Media Center PC offers a complete hardware configuration that has been optimized for viewing and storing TV programs, playing FM radio programs, plus storing and playing audio, video, and photo files. Using high-performance processors, video and audio cards, a TV tuner card, hard drives, optical drives, and networking features, they enable you to use your Media Center PC as your entertainment center for all media.

Media Center PCs come with a remote control that allows you to control the functions of Media Center with the same ease as controlling a TV set.

When not being used for media applications, the high-performance hardware of the system makes it a powerful PC for general computing.

Media Center PCs come in different form factors and can be configured with different hard drives, optical drives, processors, and video cards, so it's important to get a Media Center PC that is best configured for your needs.

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Chapter 6

Getting Audio and Video In and Out of Your MCE PC



As the heart of your digital entertainment center, your Media Center PC must be able to gather media content from both analog and digital sources. It displays that content using either a computer monitor or TV for the video and plays audio through powered speakers or an amplifier, such as a home stereo connected to speakers. This chapter looks at the devices and connections used for getting audio and video in and out of your Media Center PC.

Video

Your Media Center PC uses two devices for managing video: a TV tuner card to get analog TV signals into your computer and a video card to send video to a computer monitor, TV, or both at the same time. Each card contains its own processors designed to deliver high performance and meets or exceeds Media Center Edition PC standards for video performance.

The TV tuner card converts analog TV sources into a digital format. The conversion takes place in real time and the resulting digital signal can be saved as a file. This feature allows the recording of TV programming and the ability to pause and rewind live TV. Some TV tuner cards also include an FM tuner that processes analog FM broadcast signals into a digital format.

The video card sends either an analog or digital video signal to a display. Media Center PCs must be able to use either a standard computer monitor or TV as a primary display. They can also support both displays at the same time. When using a TV and a computer monitor at the same time, you can have the same screen mirrored on both or have each display its own screen, such as Media Center on the TV and Windows XP on the computer monitor.

The combination of a TV tuner card and a video card that supports a quality image on a standard TV allows Media Center PCs to be used for TV viewing and recording as well as for viewing home videos and DVDs in a family room setting.

TV Tuner Card

One of the first things you will want to do when using your Media Center PC is to connect your current TV source to the TV tuner card. This enables you to start using the TV functions of Media Center and

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start recording TV programs. In addition, if you want you can connect other analog sources such as an analog camcorder or VHS videocassette recorder.

The TV tuner card performs two basic functions:

- **Converts analog video to digital video:** Most TV sources are analog. The current generation of TVs are analog devices and can accept only analog signals. Broadcast TV, cable, and even satellite TV all send analog signals to your TV. To create a TV experience, your Media Center PC must be able to work with the TV sources you currently use (any or all of broadcast TV, cable, or satellite). The TV tuner card takes the analog signal and converts it to a digital format that can be used by your Media Center PC.
- **Tunes channels:** Your current TV (unless it is one of the newer "monitors") contains a TV tuner. This allows the TV to "tune" to a specific TV channel (such as 2, 5, 32, and so on). TV began as a broadcast of a wide spectrum of analog signals and a tuner was required to select a specific broadcast frequency. Whether your TV tuner card is working with an antenna and tuning into a range of broadcast channels or connected to a cable or satellite box and only tuned to channel 3 or 4, it must replicate the tuner functions of a standard TV to accept TV signals of any sort.

The TV tuner card essentially turns your Media Center PC into a TV. Here's a fun way to think about it: A TV has a TV tuner connected to a processor that converts the signal into a form that can be displayed on the screen that you view—the monitor. A Media Center PC has a TV tuner card connected to a processor that converts the signal into a form that can be displayed on the screen that you view—the monitor. The difference is that unlike your TV set, your Media Center PC has an incredibly powerful set of processors, hard drives, optical drives, and the capability to work with both analog and digital video. Between your TV source and the monitor is an incredibly powerful computer driving the TV experience. It's a TV unleashed.

SINGLE AND DUAL TUNERS

Although a TV tuner card can tune into virtually any TV channel or signal, it can only tune to one channel at a time. Back to the "TV" metaphor, most likely your TV can only tune to one TV channel at a time. That works fine for TV viewing—you can only watch one TV channel at time. With a Media Center PC you might want to watch one TV program while you are recording another. That doesn't work using a single TV tuner card.

To watch a live TV program while recording another live TV program, you need to have one TV tuner for the program you are watching and another TV tuner for the program you want to record. A Media Center with a dual tuner card or two TV tuner cards enables you to watch or record two live TV sources at the same time.

This is an important feature for TV activity in general (you may simply want to watch one show while you are recording another or, even better, record two shows at one time), but it's critical if you want to use your Media Center TV as the entertainment server in your home. If you are using a home network and extenders that allow other TVs to access your Media Center PC content, you do not want to force others to view the same program you are watching. Dual tuners enable them, through the network, to view or record another program from the remote location.

Even if you are the only user, dual tuners offer the greatest control over recording and viewing TV programs.

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CONNECTING THE TV SOURCE

TV tuner cards (or ports on a laptop) have two basic connections: Antenna/TV Signal input and S-Video input. These two connectors are shown in Figure 6-1.

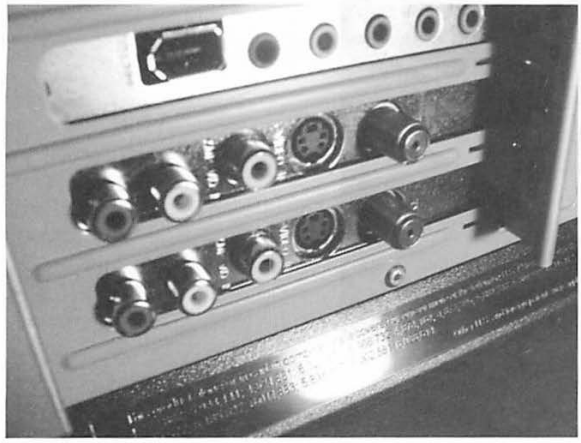


Figure 6-1: Antenna/TV and S-Video connectors on your TV tuner card.

Antenna/TV Signal connectors are the most basic form of connection and are present on most all TVs. The connectors use a coaxial cable and are commonly found on antennas or used to connect cable boxes or VCRs together. The cable has a male connection with a single wire surrounded by shielding and a threaded coupler. The TV tuner card has a female connector with threads. To make this connection you run a coaxial cable from your antenna, cable box, or satellite box to the connector on the TV tuner card.

Antenna/TV Signal connectors and cables carry both a video and an audio signal, so only one cable is required. Because this type of connection carries all information in one wire, it is the lowest quality connection option.

If you are using a video source such as a cable box or a satellite box, it may have a better connector: S-Video. This connector carries only the video signal, and it divides the signal into detail information and color information. It uses two sets of wires for this purpose and delivers a noticeably better image. If your video source has an S-Video connection, use it rather than the antenna connector. You will need to get an S-Video cable and an audio cable for making the audio connection.

Because the S-Video connection carries only the video signal, you must make a separate connection for audio. The set-top box will probably have a set of RCA connectors—one for each audio channel. The audio connection on your PC is most likely a stereo "mini plug." You will need to use an audio cable with a set of RCA connectors on one end and a stereo mini plug on the other end to make your connection. This is shown in Figure 6-2.

One final point: Your TV tuner card may or may not have its own audio connectors. Some TV tuner cards require you to use "line in" connections of your PC's audio card to accept the audio portion of your TV signal when using an S-Video connection. Refer to your owner's manual for more details, but as a simple rule if your TV tuner card does not have audio connectors, use your audio card connectors.

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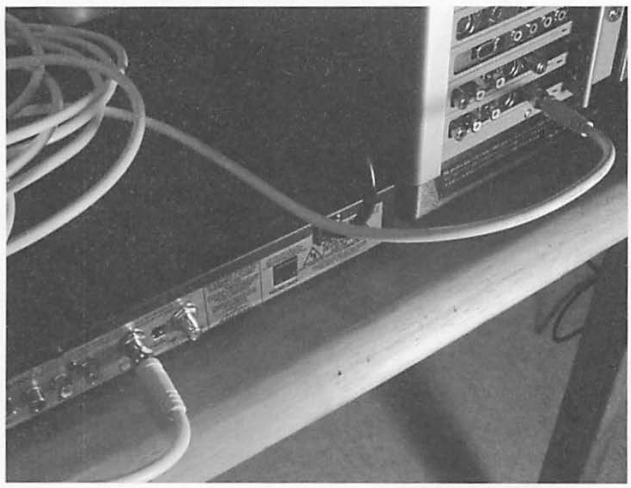


Figure 6-2: Making the audio connection between a set-top box and PC when using S-Video.

QUALITY OF TV SIGNAL

Your TV tuner card should deliver an excellent TV image when connected to a set-top box such as a cable box or satellite box. If you are using an antenna, you might notice a difference between how a TV station looks on your TV and how it looks on your PC. Anyone who has used an antenna knows that some TVs are better than others at pulling in signals.

As a tuning device, your TV tuner card is quite similar to your TV in its ability to pull in a signal. It uses a combination of hardware and software to process the TV signal. If you notice that a TV signal doesn't look as good on your PC as it does on your TV, you should consider the following:

- **Viewing on a Computer Monitor versus a TV.** TV shows will look different on a computer monitor. Although Microsoft has incorporated video de-interlacing and video scaling to make TV signals look as TV-like as possible on a computer monitor, it's still a different experience. Sitting at a desk watching TV on your computer monitor is similar to sitting 10 to 12 inches from your TV. If you stand back 6 to 10 feet you may find that the picture looks better and more TV-like from a normal viewing distance.

  TV signals are actually, in computer terms, 320 × 240 pixels. The most basic computer display mode is 640 × 480—twice the resolution of a TV display. Most likely your computer monitor is set to at least 800 × 600 and more likely to 1024 × 768. Media Center is taking a 320 × 240 resolution picture and scaling it up to the size of your display. It's a large magnification and what you will see is the softness and imperfections that come with any enlargement of a picture.

- **Antenna versus S-Video Connection.** As mentioned earlier, if you can use an S-Video connection, such as if you are using a set-top box or cable box, do so. Although this connection can't produce a higher resolution signal, it can produce a sharper one with less video noise and better color.

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- **Location of Antenna.** If you are using an antenna as your TV signal, remember that since you are using a new TV tuner in a new location, the position and location of your TV antenna may need to be adjusted. This is always a trial-and-error process, but worth the effort.

TV Sources

Media Center works with any TV source you choose. If you're setting up your Media Center PC in your family room or where you normally view TV, it will be as easy as taking the source you have connected to your TV, connecting it to the TV tuner card in your PC, and then connecting your TV to the video card on your PC.

Things may get a bit more complex if you will be using your Media Center PC in a location where you normally don't have a TV—such as in your home office. In such a situation you will need to get your video source to your PC, and that may not be simple.

Another issue arises when you use a set-top box. You use a remote control to change channels from the set-top box. In the Media Center PC configuration, it is your PC that will be changing the channels and controlling your set-top box. You will need to set up a device in front of the set-top box that allows the PC to change channels.

To make this a bit easier to understand, let's go through the different scenarios of using an antenna, basic cable, cable with a set-top box, satellite with a set-top box, and other video sources such as a VCR.

ANTENNA AND BASIC CABLE

The method for connecting an antenna and basic cable is the same. Basic cable is service that connects directly to your TV without a set-top box. (If you subscribe to basic cable but you use a set-top box connected to your TV, you should use the method for cable with a set-top box in the next section.)

All you really need to do is take the cable from your antenna or from your cable connection and use a coaxial cable to connect it to the Antenna/TV Signal input on your TV tuner card, as shown in Figure 6-3. The only other consideration is the choice of coaxial cable. If you have a jack on the wall

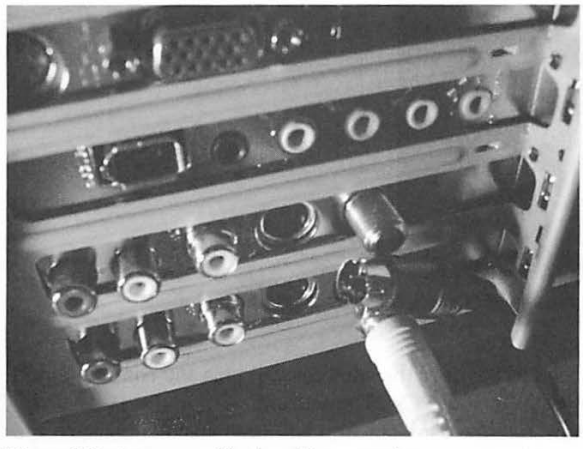


Figure 6-3: Antenna and basic cable connection.

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from your antenna or cable service, it will have a threaded female connector like the one on your TV tuner card.

Note

Coaxial cables are sold with a threaded male connector or a "quick" connector that snaps on to the female connector. The quick connectors are easy to install, but they can disconnect with a simple pull. It is better to use the threaded type of connector to ensure a reliable connection.

CABLE OR SATELLITE WITH A SET-TOP BOX

If you use a set-top box to access your cable or satellite service, whether it is analog cable, digital cable, or satellite service, the following method will apply.

First you need to see if your set-top box has just a coaxial connector or a coaxial connector *and* an S-Video connector. The cable box uses a coaxial cable from the wall to the set-top box. That brings the signal from the cable or satellite service to the set-top box, where it is decoded and converted to a standard TV signal on either channel 3 or 4. The box also always has a "TV Out" or "To TV" coaxial connection to send the signal to your TV. If it has an S-Video connection, it will have an S-Video connector and a set of RCA audio jacks labeled "S-Video Out" and "Audio Out." An example of this configuration is shown in Figure 6-4.



Figure 6-4: Typical set-top box connectors for coaxial TV Out, S-Video Out, and Audio Out.

If your set-top box only has the coaxial connector, use a threaded coaxial cable and connect it from the TV Out to the Antenna/TV Signal connector of your PC's TV tuner card.

If your set-top box has an S-Video connector, use it instead. You will need an S-Video cable and an RCA stereo-to-stereo mini plug audio cable. Connect the S-Video cable from the S-Video Out connection on the set-top box to the S-Video connection on your PC's TV tuner card. Connect the

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RCA end of the audio cable to the Audio Out connection of your set-top box and the stereo mini plug into the Audio In connector of your TV tuner card (if it has audio connections) or the line-in connector on your audio card. An example of such a connection is shown in Figure 6-5.



Figure 6-5: Connecting a set-top box to the TV tuner card using an S-Video connection.

That connects the audio and video from the set-top box to your PC, but there's more to do. You will next need to connect a Remote Sensor and IR Control Cable (supplied with all Media Center PCs) to your computer.

Remote Sensor

To use the Media Center Remote Control you must first connect the Remote Sensor. Although you may have a computer where the Remote Sensor is built into the computer, most Media Center PCs use an external device. This is a small box that receives the signals sent from the remote control and sends them to the PC via a USB port. Figure 6-6 shows a Remote Sensor.

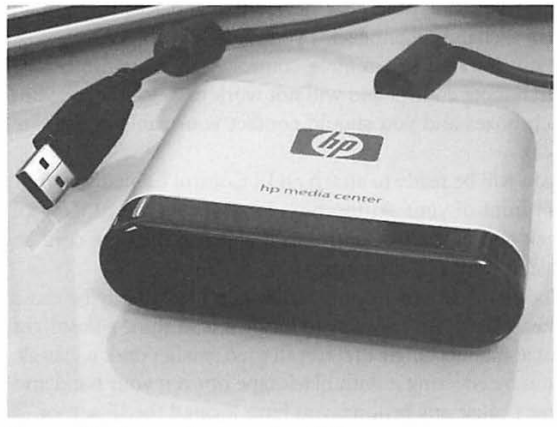


Figure 6-6: Remote Sensor with a USB connector.

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The Remote Sensor can be connected to any USB port on the front or back of your Media Center PC. The reason why a "remote" device is preferred over one built into your PC is that it can be positioned next to your TV or monitor. It's intuitive to point a remote control to the TV program you are watching—not your PC. Once you have connected the Remote Sensor to the PC, you can use the long cable to position it on or next to your TV or monitor. An added benefit is that in a living or family room setting you can actually put your PC out of sight since the Remote Sensor is what will control it when using a remote control.

Figure 6-7 shows the typical placement of a Remote Sensor in a family room setting. If you're using your Media Center PC in an office setting you should also place your Remote Sensor next to your computer monitor. This will always allow you to point to the screen to control your viewing.



Figure 6-7: Placement of a Remote Sensor in a family room setting.

IR Control Cable

Once you have connected your Remote Sensor you can attach the device that replaces the remote control from your set-top box and turn it on and change channels for you.

This device works for set-top boxes that use infrared (IR) remote controls. Some set-top boxes, such as some from Dish Networks, use a UHF remote control and will not work because they are not IR devices. You can add an IR remote to such boxes and you should contact your cable or satellite provider for such an option.

If the set-top box does use an RF remote you will be ready to attach an IR Control Cable from your Remote Sensor and place the sensor on or in front of your set-top box. First, locate the IR Control jack on your Remote Sensor. Connect the jack end of the IR Control to it and run the long cord so that you can locate the sensor end of the cable in front of your set-top box.

Next is the tricky part: You will need to locate the IR sensor on your set-top box. It may be quite visible or it may be hidden behind dark smoked plastic. An easy way to locate it is to shine a flashlight into the front panel of the set-top box. Look for a small rectangle that has an even smaller dark rectangle inside of it. That is the IR sensor. You can test it by covering it with black tape or even your hand and using your remote control. If the remote doesn't cause any actions, you have located the IR sensor.

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There are two methods of attaching the IR Control Cable depending on the type of connector provided by your manufacturer. The first method is to simply place the sensor end of the cable in front of your set-top box's IR sensor. This will work, but since the device can be bumped out of place it is risky.

The preferred method is to stick the sensor end of the IR Control Cable directly over the IR sensor on the set-top box. The IR Control Cable sensor has adhesive for this purpose. Once connected, this provides a reliable method for controlling your set-top box without the device moving or not being in the best position. This method is shown in Figure 6-8.

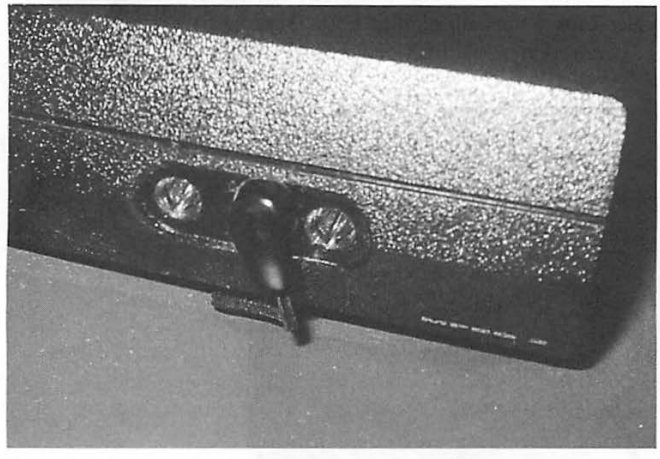


Figure 6-8: IR Control Cable attached to the front of a set-top box.

OTHER VIDEO SOURCES

The final method to get analog video into Media Center is to connect your TV tuner card to a video source other than TV; for example, a VCR or analog camcorder. This enables you to capture or view BetaMax or VHS tapes and video from analog camcorders.

The connections are essentially the same for a cable or satellite set-top box. If your device has only a coaxial connector, use a coaxial cable between it and the Antenna/TV Signal connector on your TV tuner card. If it has an S-Video connector and Audio Out jacks, use those to make the connection.

Just as with a set-top box, you need to know which channel the device is tuned to—most likely either channel 3 or 4.

Video Cards

You connect your TV or computer monitor to your Media Center PC's video card. You can connect a TV, a computer monitor, or both at the same time.

Although Media Center PCs use coaxial connectors for bringing in a TV signal through the TV tuner card, the video card in your PC does not have a coaxial connector for connection to your TV. The video cards in use in most all Media Center PCs have a standard VGA 15-pin port for computer monitors and an S-Video Out port for connection to a TV. Some video cards may also have an RCA-type composite video out port or a DVI port for newer TVs and computer displays.

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What does this mean? If you have a TV that only accepts signals using a standard antenna/coaxial connection, you won't be able to use your TV as-is. You need to purchase an adapter from a source such as Radio Shack that converts an S-Video or composite video signal into an RF signal as used by the antenna connection on your TV.

Connecting TVs and Monitors

Assuming that you have a TV with a composite, S-Video, or DVI connector, you are ready to connect your TV to your Media Center PC. The process of doing so is pretty straightforward: Connect the matching connectors from your video card to the connector on your TV using the appropriate cable. Figure 6-9 shows a typical S-Video connection between a video card and a TV.

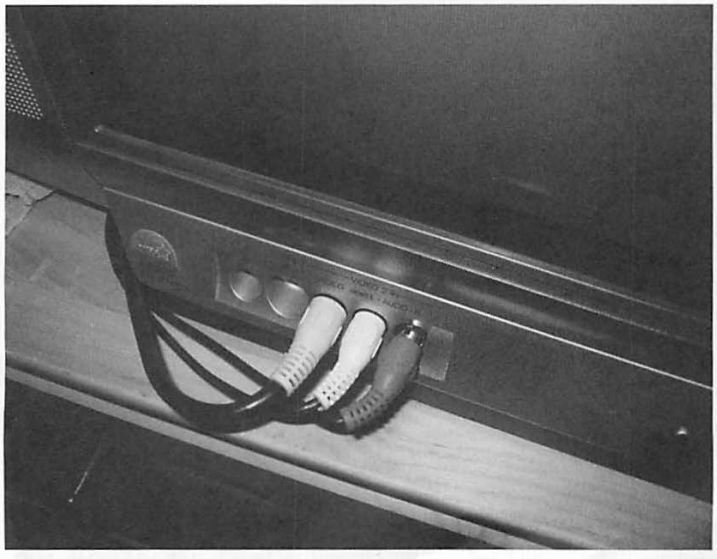


Figure 6-9: TV connected to the S-Video port on the video card.

If your video card has only an S-Video port and your TV has only an RCA-type composite connection, you can use an adapter to convert the signal from S-Video to composite. If your TV has both types of connections, always use the S-Video connection. The adapter usually comes with your PC, but if it didn't, such adapters are available at stores such as Radio Shack.

That gets the video to your TV, but not the audio. You need to connect a cable between the Line Out (or the headphone jack) of your audio card to the Audio In connector of your TV. This is usually done with a with an RCA stereo-to-stereo mini plug cable. The audio card on your PC uses the stereo mini plug end of the cable and your TV uses the RCA stereo end.

Connecting a computer monitor is even easier. Monitors have either a 15-pin VGA connector or a DVI connector. If both your video card and monitor have DVI connectors, use a DVI cable to connect them. If your video card has *only* a DVI connector and your monitor uses a 15-pin VGA connection, you will need to use the DVI-to-VGA adapter that came with your computer or video card. Most likely your video card and computer monitor will both have 15-pin VGA connectors and if so, connect the

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monitor to the video card via these connectors. When using a computer monitor, audio is played through the speakers that you have attached to your computer.

You can connect both a TV and a computer monitor at the same time. Following the connection scenarios above, connect the TV using the S-Video or composite connection and your computer monitor to the 15-pin VGA or DVI connector. When you turn on your computer both displays will be active and you can use the Display Properties from the Control Panel in Windows XP to make adjustments to how the two displays should work together. You can have them both display the same information and create a "virtual" desktop that spans the two displays. This is good for using Windows XP on the computer monitor while Media Center runs on the TV.

Cross-Reference

Adjusting the properties of your video card is covered in Chapter 9.

Audio

In addition to changing the way you watch TV, a Media Center PC also changes how you listen to music. PCs have become the new home stereo in many ways—people are using them to buy music, burn CDs and MP3s, and listen to music. Although a PC is great for playing music, it would be hard to dedicate a PC just for the purpose of playing music in the family room or den. Media Center PCs change that equation.

By putting TV viewing, DVD playing, and music all in one system, your Media Center PC becomes a replacement for many current home entertainment devices, including the traditional home stereo. Whether located in the family room directly or through an extender box, the Media Center PC makes the perfect home stereo. It can play virtually all music formats (MP3s, WMA, audio CDs, audio DVDs, and WAV files) and it can connect to the Internet for radio and streaming audio.

When you connect your Media Center PC to a great set of powered speakers or surround sound system you have the best audio system you will ever find at an amazingly low price. This section looks at how to connect powered speakers or your current home stereo to your Media Center PC.

Sound Card

Your Media Center PC comes with a sound card that enables you to import analog music into your PC and send either digital or analog music to powered speakers or an amplifier connected to regular non-powered speakers.

Most sound cards have the following connections:

- **Line In** for direct connection to another audio device.
- **Mic** for capturing live audio using a microphone.
- **Line Out** for output to a TV, powered speakers, or an amplifier.
- **Headphone Jack** for listening to audio using headphones, or it can be used as a Line Out connector.

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Higher-end PCs may also have connections for surround sound systems. The connection for a surround sound system is digital and should only be used to connect to such a system. Figure 6-10 shows a typical set of connectors on a sound card that supports surround sound.

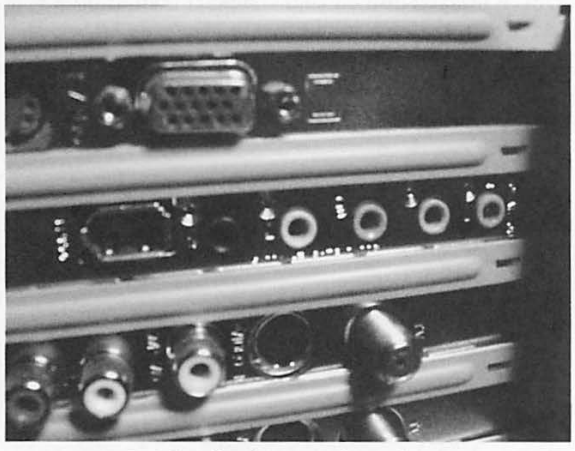


Figure 6-10: Sound card with surround sound support.

Making connections to your sound card requires that you have the proper cables. The sound card uses 1/4″ stereo mini plug connectors. When working with powered speakers you will most likely use a cable with stereo mini plug connectors at each end. When working with older audio equipment and TV devices you will often encounter RCA-type stereo connections. For such situations you need a cable with a stereo mini plug at one end and RCA-type stereo connectors at the other end. These two types of connectors are shown in Figure 6-11.

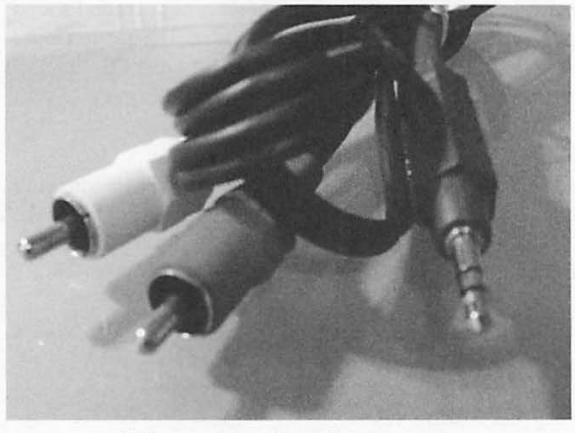


Figure 6-11: 1/4″ stereo mini plug and RCA-type stereo connectors.

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Powered Speakers

Powered speakers have come a long way since the early days of hooking up a pair of tiny one-watt speakers to a PC solely for the purpose of hearing beeps and warnings. Today, many powered speakers rival high-end amplifiers and speaker sets in audio quality and are being made by the most prestigious audio manufacturers.

The most typical configuration for powered speakers is a subwoofer with two small satellite speakers. The subwoofer takes on the full task of providing lower frequency sounds—the bass and "bottom" to music and audio in general. The subwoofer provides the rumbling, room-shaking effect when viewing a DVD. Because human ears can't discern the direction of such low frequency sounds, only one speaker is required either in a stereo or surround sound system.

The smaller satellite speakers provide stereo imaging and provide most all of the mid- and high-range sounds. Some of the best satellite speakers can be quite small, but regardless of their size, like any audio system the quality of sound is subjective.

In a surround sound system, you will have two extra satellite speakers and a center channel speaker in addition to the subwoofer. Often referred to as a 5:1 system, you will have two satellite speakers for the front of the room, two for the back of the room, a center channel speaker for the front center of the room (usually with the TV in a media setting), and a subwoofer placed out of sight if possible.

Powered speakers, as their name implies, come with their own amplifier. Current systems can range from as few as five watts of power up to hundreds of watts of power. Long debated, the value of a high-watt system that can play sounds very loud without distortion is less important than the quality of sound at all levels. Even a low-watt system can provide excellent sound if the amplifier and materials used in the speakers and housings are well designed.

If your Media Center PC came with a set of powered speakers, they have been selected because they can play both music and movie soundtrack sounds well. Since you paid for them with your system, be sure to try them before looking for a more powerful or elaborate solution.

Connecting to a Stereo or Amplifier

If you have a sound system or home stereo that you really like, you can use it rather than a set of powered speakers to provide sound for your Media Center PC system. About the only drawback in such a scenario is that it adds some complexity regarding volume control—your current system will not be controlled by your PC remote control. You will need to turn it on an off and make adjustments—including volume—independent of your Media Center PC.

You use the same connectors and cables as described for a set of powered speakers. The Line Out connection from the sound card should be connected to the Line In connection of your stereo or amplifier. A typical connection from a sound card to a home stereo is shown in Figure 6-12.

ADJUSTING VOLUME

You can make changes in volume level when using a home stereo or amplifier either by using the volume control on the stereo, or using the Media Center PC's own volume adjustments. A good method is to set your home stereo or amplifier at a fairly loud volume (just short of too loud and without any hint of hum) and then use your PC's volume control at all times. Once you use this method you will only need to touch the home system to turn it on or off.

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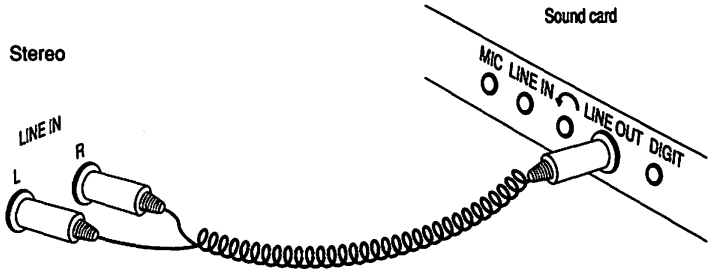


Figure 6-12: Connecting a Media Center PC to a home stereo.

ADJUSTING TONE AND BALANCE

Use your home stereo or amplifier's tone, equalization, and balance controls to get the most desired sound. You can also make these adjustments from the PC using the sound control panel. In some cases using both can produce an incredible range of control over the sound of your system.

Getting Sound Into Your System

If you're planning to capture audio from analog devices such as a cassette player, turntable, or other device, connect it to your sound card using the Line In connection.

Media Center does not provide direct support for such connected devices. Using Windows XP and an audio capture program (including the simple but effective Sound Recorder program from the Accessories/Entertainment start menu), capture the desired analog source and save it as an MP3, WAV, or WMA file. Once you've captured and saved the file, it will be recognized by Media Center and can be played in My Music.

Summary

Your Media Center PC connects to your current TV sources including antennas, cable, or satellite TV services and other analog devices such as a VCR. Using a TV tuner card your PC can play TV much in the same way as your current television set. Unlike a TV, it can record, rewind, or pause live TV. Using a dual TV tuner card you can watch live TV while recording live TV or have different live TV programs playing in different rooms when using extender devices.

A TV or a computer monitor can be used as the primary display and both can be used at the same time. This allows the Media Center PC to be effective both as an entertainment device and as an office/home computer. The entertainment experience is completed by connecting the Media Center PC to either a set of powered speakers or a home stereo.

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Chapter 7

Media Storage: Adding and Replacing Drives



One of the nicest features of a Media Center PC is its ability to record TV programs. Even if you're not a person who records lots of TV shows on your VCR, you will quickly learn that using a Media Center PC for recording TV is a completely different experience—you can time-shift TV.

If there is a show you want to watch, with a Media Center PC you have two options:

- Watch live TV. Make sure you are home when your program is on, have nothing else planned, be in front of your TV, and hope the phone doesn't ring! Sure, with My TV in Media Center you can "pause" the program, but you still have to be there when it's on.
- Schedule a recording of the show and watch it whenever you want.

The second option opens up lots of TV programming for you. By being able to quickly and easily schedule recordings and have My TV record all of your favorites shows, you can watch shows you otherwise might miss due to your schedule. Now you can skip over parts (yes, that means commercials, too) and record one program while you watch another. It's simply a better way to watch TV.

With the ability to time-shift by recording TV shows, and the desire to save your favorites, you will find that storage on you hard drive will soon be filling up with all kinds of TV shows. And if you want to save some of those shows long-term and even share them with friends and family, you will want to burn them to DVDs.

This chapter takes a look at different ways to save TV programs (and music) and how to expand your storage.

Hard Drives

Your Media Center PC comes equipped with a fairly large hard drive. Most models start with an 80GB drive and newer models have up to 500GB drives available. Music files, digital photo files, video files, and recorded TV shows all take up large amounts of drive storage. Compared to virtually any other file type (such as Word documents or spreadsheets), media files are huge.

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There is an old saying, "You can't be too rich or too thin." When it comes to Media Center PCs, you can't have too large of a hard drive; you will need it. The good news is that it's easy to add hard drive storage and the prices just keep going down. This section looks at hard drive options.

Real-World Media Storage

Last year I converted all of my audio CDs to MP3 files. The average CD, when converted, was 60MB. With 1,200 CDs, my music files consumed 50GB on my hard drive. In the past two years I have taken a lot of pictures with my 5-megapixel digital camera. My picture files are taking up 8GB of space. Undaunted by the size of those files I undertook the biggest storage demon of all: converting my home videos to AVI files for editing. Just a couple of hours of video took up more than40GB of drive space. Before I even recorded a TV program I had 100GB of media files filling up my hard drive. Looking for a great price on a hard drive, I was able to add a second 160GB hard drive for about $80 (after rebates) and it's now filling up with TV recordings.

Internal Hard Drives

An internal drive is the best hard drive value. You can replace the drive you currently have with a larger one, but it makes more sense to add a second hard drive if your computer has an open drive bay.

If your computer doesn't have room for a second hard drive, replacing your current hard drive is possible but it is the most complicated and expensive solution. You will lose storage you have already paid for and you will also need to go through a process where you transfer all of your current files, programs, and settings to a new hard drive. Although there are good utility programs for this purpose, it does add complexity and risk and you may have to reinstall Windows using your original Windows installation discs.

If your computer has a bay for an additional drive, the next step is to determine the size and type of drive to add.

Radical Measures

I own a really nice Hewlett-Packard Media Center PC. Everything was great until I decided I needed to add a second hard drive. The media card reader unit was occupying the space normally used for a second hard drive. That meant that I would either have to remove the media card reader (not an option—I use it all the time), replace my current hard drive, or add an external hard drive. I didn't want to replace the large hard drive already in use, nor did I want to add an external drive and add more boxes in my family room.

Searching around inside the PC and mumbling curses that the connectors for adding a drive and power to one were just dangling there, I decided to take matters into my own hands and add a second drive and mount it under the drive cage in an open area inside of the PC. Would the manufacturer approve? I'm sure they wouldn't. Does my second drive work? Perfectly. I was not concerned with overheating or cabling issues—the owner's manual stated you could add a second hard drive if the

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bay was open. The media card reader used little power and produced little heat so I was confident that taping a second drive under it would solve my problem.

DRIVE SIZE AND STORAGE STRATEGY

The types of files you store will determine how large of a second hard drive you should get. Table 7-1 gives you typical storage estimates to help you determine how much additional storage you need.

Table 7-1 Calculating Media Storage

File Type	*Typical Size*
MP3 File	60MB per CD
Audio File	700MB per CD
2.1-megapixel JPEG	1.2MB per picture
Video AVI File	14GB per hour
Video MPEG File	1GB per hour
High Quality TV Recording	3GB per hour
Low Quality TV Recording	1GB per hour

Any file that is compressed (such as MP3s and MPEGs) will vary in size, but these show a "worst case scenario" for your planning.

Like the "Real-World Media Storage" sidebar earlier in the chapter, create an estimate of how many hours of music you will want to store, how many photos and videos you have, as well as how many you will most likely take in the next two years. Think about how many hours of recorded TV shows you will want to keep available. Using Table 7-1, you can calculate how much media storage you will need.

Next, consider how much data storage you have used in the past. This includes all of the data files you used when working online, with word processors, spreadsheet programs, accounting programs, and files created in other applications.

Finally, add it all up. A good strategy is to get a drive that is twice the size of your estimate. So, if your estimate is 80GB, get a 160GB drive.

A good strategy to consider that will help determine what drive size to get is to leave your current hard drive (your C drive) for programs and general data storage and designate the hard drive you are adding as your media drive. You can then put all of your videos, photos, music files, and recorded TV shows on your D drive. This also helps manage your overall file storage.

Hard drives come in a range of sizes. You can find drives from 40GB up to 250GB in most retail stores such as Best Buy or Circuit City. You can find larger hard drives at computer stores and through mail-order retailers. Prices are always coming down and rebates are common, so be sure to shop for the best price per GB.

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Tip

Drives come in different speeds. Current drives are either 5400 RPM or 7200 RPM. Putting all arguments aside, it only makes sense to purchase a 7200 RPM drive, and preferably one with an 8MB buffer. The faster spin rate of the 7200 RPM drive makes the data transfer faster and the 8MB buffer also helps ensure that recorded TV shows and videos play back without pauses. When you are recording one show and playing back another, you will be glad you purchased a fast drive.

Drives come with different interfaces and your owner's manual will also list what type of drive is in your computer. Most Media Center PCs use an IDE drive; specifically, an EIDE model. Some models use ATA drives. Check with your manufacturer if you are not sure. Hard drive manufacturers also have support numbers to help you choose the right drive for your PC.

INSTALLING AN INTERNAL HARD DRIVE

Hard drives use common connectors and mounting systems, so installing one is really pretty easy. Generally about the only thing you will need is a Phillips head screwdriver. Usually you won't even need any software for installation—drives typically come formatted and ready to use right out of the box.

Follow these steps to install a new hard drive:

1. Check your computer owner's manual to make sure that it has a bay for a second disk drive. That section should contain information on expanding your system and have diagrams or instructions on how to remove the case from your computer and reach the drive bays.

Caution

Be sure to disconnect the power cable from the computer before starting.

2. Next you should search to find where you will be mounting the second hard drive and determine if there is an expansion cable connector available. If the cable goes only to the current hard drive and does not have a connector for a second hard drive, you will need to change the cable. Your new hard drive should contain a special cable for this purpose; it will allow you to connect both drives to the processor board. This cable is shown in Figure 7-1.
3. Locate the power connector in your PC. This connector is shown in Figure 7-2. There may be several of these, and any one will work.
4. After making sure that you have an open drive bay, the right cable, and an available power connector, there is one more action before installation: Your drive will have a series of small pins and a *jumper* to help identify the drive to the operating system. Drives are referred to in the system as *masters* or *slaves*. This helps the system to know which drive to boot from when starting the system—the master drive. The second drive will occupy the slave position.

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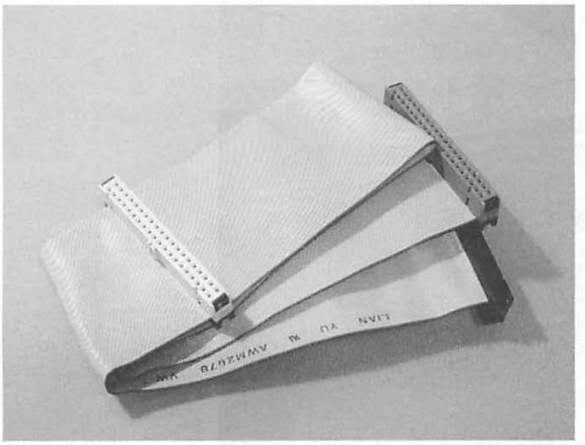


Figure 7-1: IDE cable for adding a second hard drive (note that there are two drive connectors).

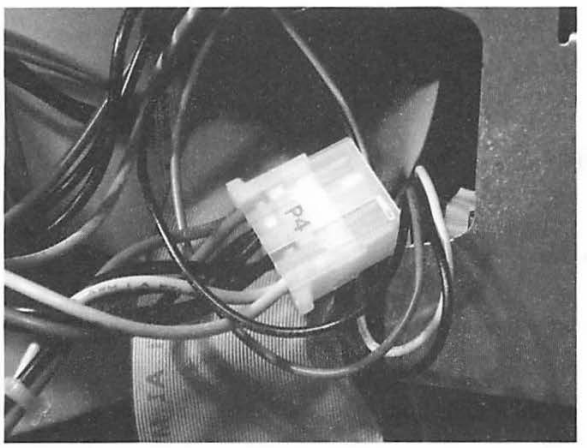


Figure 7-2: Power connectors located inside of your PC cabinet.

The jumper will allow you to identify the drive by putting the jumper over the right set of pins on the hard drive. Your drive will come with a table showing jumper settings. An example of a jumper and set of pins is shown in Figure 7-3. You can choose Master, Slave, or preferably Cable Select, which lets the cable choose which drive is which. First try Cable Select. If for some reason that doesn't work you should then change the jumper setting to Slave. Figure 7-4 shows a typical set of jumper settings for a hard drive.

5. Now you're ready to install the hard drive in the open bay of your computer. Have a Phillips head screwdriver ready and the set of small screws that came with your hard drive.
6. Position the hard drive, without the screws, in the bay so that you have room to move it.

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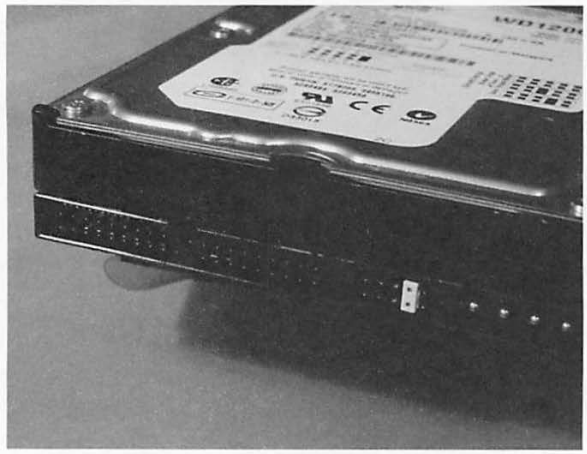


Figure 7-3: Jumper and pins on the back of a hard drive.

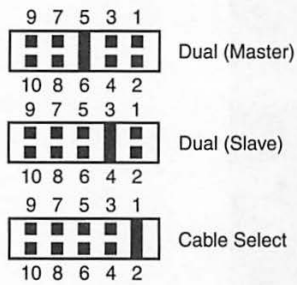


Figure 7-4: Sample of Jumper settings for setting Master, Slave, or Cable Select on a hard drive.

7. Connect the IDE connector cable to the back of the hard drive. The cable should snap into the connector without force.
8. Insert the power connector to the drive. Figure 7-5 shows both the connectors in place.
9. Finally, position the hard drive where the screw holes are aligned with the spaces in the drive bay. Use the screws provided and secure the drive. Before putting the case back on the PC, you can reconnect the power cable and start your computer. If the installation is a success your computer will start and you can go the My Computer control panel and see your new "D" drive on the menu. If you don't, review your steps and jumper settings and try again.
10. If the drive is present and operating, copy a few files to it and try opening them. If everything is working, shut down the computer and reattach the cover. You now have successfully upgraded your storage.

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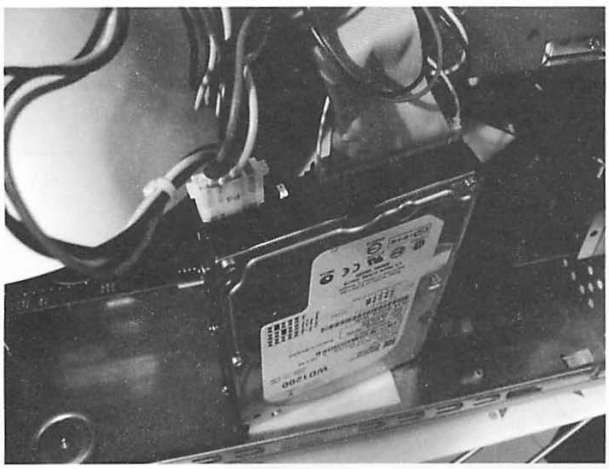


Figure 7-5: IDE cable and power cable connected to the hard drive.

External Hard Drives

All the rules of data storage requirements detailed for internal hard drives apply to adding an external hard drive. You may want to add an external hard drive for the following reasons:

- Your Media Center PC does not have an open bay for an internal hard drive.
- You already have a second internal hard drive and want to add even more storage.
- You would like to share files on the extra hard drive between computers.

External hard drives are essentially the same hard drive that you would add as an internal hard drive, but they come in a self-contained case with either a USB or FireWire/IEEE 1394 interface and their own power supply. Because of the extra interface, case, and power supply, they cost more than internal hard drives.

You can connect a large number of external drives to your computer (this is called *daisy chaining*) to add storage when needed. Both the USB and FireWire/IEEE 1394 interfaces allow connection of multiple drives to your computer.

Your Media Center PC has both types of interfaces so either drive will work. Newer, more expensive external drives will have both interfaces. Since USB 2.0 is a bit faster than FireWire/IEEE 1394, it seems to be the drive of choice. Either drive will work well. As always, shop for the best drive value regardless of which interface you choose.

Connection of an external hard drive is no more complicated than using the correct cable (USB 2.0 cable or IEEE 1394 cable) and connecting it from your external hard drive to your computer. You can connect the external drive when the computer is off or on. Figure 7-6 shows the back of an external hard drive using a FireWire/IEEE 1394 connection.

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Caution

If for some reason you need to remove an external hard drive while the computer is on, be sure to click on the "Safely Remove Hardware" tray icon from the bottom-right corner of your Windows XP taskbar.

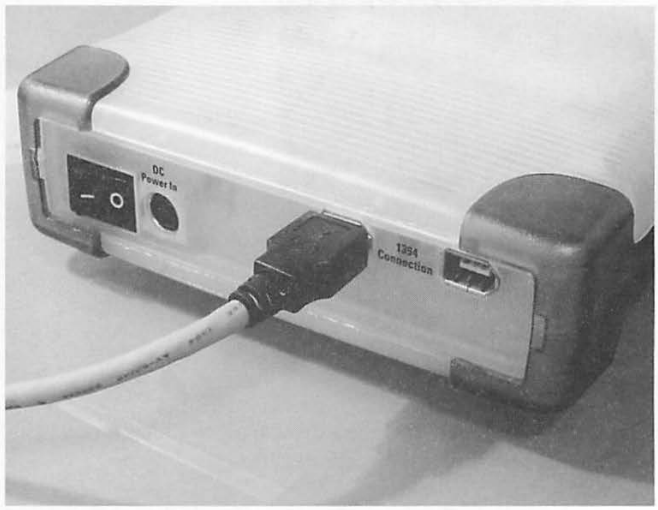


Figure 7-6: The connector on the back of external hard drive.

Tip

Because external hard drives are easy to add and remove from your computer, you can use one as a data transfer drive between two computers. For example, you can load your external hard drive with files at work and bring it home to use or transfer files to your main hard drive.

Figure 7-7 shows an external hard drive sitting on top of a Media Center PC. Although small and attractive, it is an extra device. In a family room or living room setting you may find that lots of extra drives and devices add clutter or you don't have great locations for them. You can always position the drive behind the computer or out of sight in a cabinet if that is an issue. Be sure to get a cable that's long enough for the location but not longer than necessary.

Optical Drives

One of the things you can do with recorded TV programs is burn them to a DVD. You can archive your shows onto DVDs to free up hard drive space and even share them with other people. You can also

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Figure 7-7: An external hard drive sitting on a Media Center PC.

create your own slideshows, music CDs, and store data onto CD-R or DVD discs. Having a "burner" (meaning a DVD and/or CD burner) is a key benefit of owning a Media Center PC.

Your Media Center PC can come equipped with a variety of optical drives. Your machine may have a DVD drive, a DVD burner, CD-ROM, or CD-RW drive. It may also have two drives, such as one DVD burner and a CD-ROM drive. You may also have a combo drive that can play a DVD and record CDs. Regardless of what type of drive you have, you will want to make sure you can play DVDs, burn DVDs, and burn CDs, too.

Two drives may seem excessive, but there are good reasons for having them. First, you will need to have a DVD drive, and it may not be as fast for accessing CD-ROMs as a high-speed CD-ROM drive. Second, you may want to have a drive to copy discs from. It's easier and faster to copy a disc with two drives.

Regardless of how your computer came equipped, you can easily customize it with the right drive if necessary. Just as with hard drives, optical drives—especially DVD burners—have come down in price and way up on performance.

Types of Optical Drives

Table 7-2 lists what types of optical drives are available today.

Table 7-2 Optical Drive Types

Drive Type	*Function*
CD-ROM	Reads CD-ROMs
CD-RW	Reads CD-ROMs and writes to CD-R and CD-RW discs
DVD	Plays DVDs and reads CD-ROMs
DVD-RW	Plays DVDs, reads CD-ROMs, writes DVD-R and DVD-RW discs, and writes CD-R and CD-RW discs

Continued

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Table 7-2 Optical Drive Types (*Continued*)

File Type	*Typical Size*
DVD+RW	Plays DVDs, reads CD-ROMs, writes DVD+R and DVD+RW discs, and writes CD-R and CD-RW discs
DVD+/-RW	Plays DVDs, reads CD-ROMs, writes DVD+/-R and DVD+/-RW discs, and writes CD-R and CD-RW discs

As you can see, there are a lot of drive options. A DVD burner as the primary drive enables you to read all disc formats and create your own DVDs. If you only plan to use the discs you create on your Media Center PC, compatibility will not be a concern. The drive you use to create a DVD will always be able to play it back.

If compatibility with home DVD players is an issue, you would do best with a DVD+/-RW drive. That enables you to create a DVD that works on machines that prefer a specific disc format.

How can you tell which DVD format is right? It largely depends on the home machine you plan to play the disc on. It should state in the owner's manual which format it supports. About the only way to really know is to test a DVD+R or DVD-R disc on the home machine.

For a second drive, with prices so low, it may be a good idea to add an additional DVD burner. It offers the greatest flexibility and enables you to copy DVDs from one drive to another without first caching the data on the hard drive. A good way to deal with the compatibility issue is to add a second DVD burner that is in a different format from the drive you have. For example, add a DVD-RW if your first drive is a DVD+RW.

When shopping for a drive, look for CD-ROM drives that are at least 48X read speeds. For DVD burners, stay away from 2X drives. A 4X drive is the minimum you will want, and the best buy is an 8X DVD+/-RW drive. Although it will only write -R discs at 4X, it will burn +R discs at 8X. DVDs are large-capacity discs (4.7GB) and the faster the burner the better.

Installing an Optical Drive

Your Media Center PC will have an optical drive in-place. First, check to see if you have one or two optical drive bays. Unlike hard drives that reside inside the computer, it's pretty easy to see on your front panel how many bays are available for drives. If your computer can hold two drives and has only one drive installed, there should be a flat panel covering the space where a second drive goes. That panel is easily removed when you install your drive.

If you have room for two drives and you are adding a drive, the new drive will fit into the empty bay. If you are replacing an existing drive, you will need to remove it. Check your Media Center PC's owner's manual for instructions on how to open your computer to install drives.

Just as with hard drives, optical drives use an IDE cable, jumper pins, and a power cable. The cable attached to your current optical drive should have an additional connector for a second drive and there should be an available power connector.

Follow these steps to install an optical drive:

1. Start the process by disconnecting your computer's power cable.
2. Next, open your computer's cabinet, locate the optical drive, and check the cables connected to it and study how they are attached. At this point you are ready to replace the current

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drive or add a second drive. Before proceeding, look at the back of your new drive and set the pin jumper, just like with a hard drive. Figure 7-8 shows the back of an optical drive.

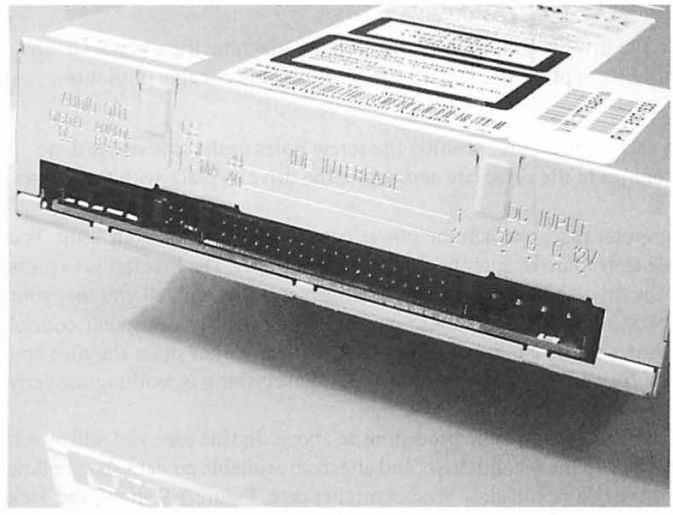


Figure 7-8: Connectors on the back of an optical drive.

Note

In addition to the IDE connector, pins, and power connector there are additional connections for audio. Older PCs use those connectors to send audio from CDs to sound cards, but that will not be the case with a Media Center PC—all audio is obtained using the IDE connector.

3. Setting the jumper is a matter of referring to the installation instructions that came with the new drive. There will be a table explaining how to set the position of the jumper. If you are replacing the original drive, you can look to see how its jumper was set. It most likely would have been set to Master or Cable Select. You can use the same setting for the replacement drive. For a second drive, you would use the Slave setting, or preferably the Cable Select setting. That lets the system determine the position of the drive.
4. After setting the jumper, you are ready to install the drive. Installation will require a standard Phillips head screwdriver.

At this point if you are replacing the original drive, follow the next two steps:

1. While the drive is in place, gently tug at and remove the IDE and power cables from the drive. Next, remove the small set of screws that hold the drive in the bay on each side of the drive cage.

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2. Finally, slide the drive out to the front of the computer (or follow the instructions in the computer owner's manual if that is not possible). Set the drive aside.

The steps for installing a replacement drive or adding a second drive are the same:

1. Slide the new drive into the drive bay and position it without attaching the screws. Gently insert the IDE cable until it is in place and snug. Then inset the power cable until it is locked in place.
2. After you are sure both cables are secure, position the screw holes in the side of the drive with the screw hold openings in the drive bay and secure the drive in place with the screws.

Before reassembling your computer case, reattach the power cord to your PC and start it up. You will want to perform a few simple tests to make sure the drive works properly. The first test is to press the Eject button on the front of the drive. The drive should slide open and that will tell you that your power connection is working. Next, pop in a CD—audio or data. Using the My Computer control panel, look to see if the drive shows up in the list of drives. If it is there, either open the disc you inserted to make sure it reads the files on it or play the audio CD. If everything is working properly you can then replace the cover and begin using your drive.

Installing a second optical drive follows the same procedure as above. In this case you will attach the second connector on the IDE cable to the second drive, and attach an available power cable. Follow the same process for testing the drive before you close your computer case. Figure 7-9 shows the back of two optical drives installed in the drive cage of a Media Center PC.

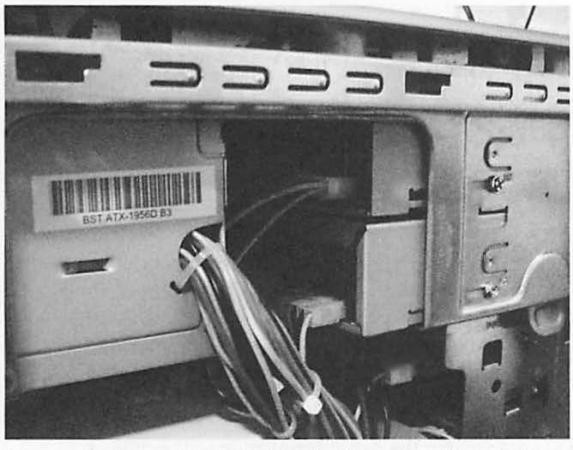


Figure 7-9: Two optical drives installed in a Media Center PC.

Current drives (both hard drive and optical) do not require special drivers or software installations. They run using standard drivers provided with Windows XP. Your new drive may come with application software or drive utilities, however. Neither is required by Media Center or Windows XP, but they may be valuable and you should determine if they would be useful to you before installing them.

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Note

Your new drive may also come with CD- or DVD-burning software. Because Windows XP will only record onto CDs, you will want to install the software or consider buying software for DVD and CD burning, such as Easy CD Creator or Nero. This will be useful when you are Using Windows XP for non-Media Center disc activity.

Summary

Media files, especially TV recordings, consume lots of hard drive space. To take advantage of the TV recording features of Media Center and to put all your photos, music files, and home videos on it, you may need more storage space. You can do this by adding a second internal hard drive, an external hard drive, or replacing the hard drive that came with computer with a larger one.

Adding or replacing an optical drive is easy and will allow you to quickly and easily burn DVDs of your TV programs or other media. By having a combination of DVD+RW and DVD-RW drives you will be able to create DVDs that work on most any home DVD player and also read virtually all CD-ROM, DVD, and audio CD discs.

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Chapter 8

Home Networks and Media Center Extenders



The cost and ease of creating a home network has come to a point where there is no reason not to network your home. If you have more than one computer, you can share an Internet connection, files, and have a central place, such as a large hard drive, for storing all of your files.

Media Center PCs go beyond that. By using "Extender" devices, you can add Media Center functions such as recording TV, viewing the Program Guide, and playing music and videos from any TV. That means that you can make every TV in your home an extension of Media Center without adding additional computers.

This chapter takes a look at creating a home entertainment network with your Media Center PC as the hub and acting as your entertainment server.

Networking Basics

If you have not yet created a network with your PCs, this section gives you some basics on the process and what you will need.

Windows XP has a number of wizards that will help you create your home network, but before you get that far, you will need some networking hardware.

There are two types of networks:

- **Wired:** A wired network connects each of your computers and devices with a wire, either Ethernet wiring or phone lines. For media serving, you will only want to consider Ethernet wiring due to its faster speed. Wired networks are the most reliable form of networking, but they have drawbacks for homes or apartments that are not already "wired." It means running cables along walls or running wires through walls, which is often not practical.
- **Wireless:** Using the same type of wireless signals as a cordless phone, wireless networks use transmitters/receivers to send data between computers and devices. Because wireless signals are subject to interference of all kinds (other wireless devices such as cordless phones, electrical fields, and so on), they are not always 100 percent reliable and have slowdowns in data transmission. For homes and apartments where you do not want to run cables, this is the best solution since no wiring is required.

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Wired networks are extremely inexpensive. A typical router for a wired network can cost as little as $30. All you need is the router and cables to connect devices to the router.

Note

Cables range in price, but if you shop smart you can get cables for a great price. The same 25-foot Ethernet cable is $11.84 at Wal-Mart and $19.95 at stores such as Office Depot.

Wireless networks are not as simple. A variety of "standards" for wireless networking exist and they keep changing. In addition, you need adapters for each device so the cost can run very high. There is little reason to even consider slower standards when using Media Center. You need the fastest wireless network you can get since you are dealing with media files. Table 8-1 is a guide to the different wireless standards with recommendations as to which you should use.

Table 8-1 Wireless Network Standards

Standard	*Speed*	*Recommendation*
802.11a	Up to 54Mbps in the 5GHz band	Recommended, but costly. Not compatible with 802.11b devices. Most reliable for home use since there are few devices using the 5GHz band.
802.11b	Up to 11Mbps in the 2.4GHz band	Not recommended. This standard is too slow for live or recorded TV or video playback.
802.11g	Up to 54Mbps in the 2.4GHz band	Recommended, but look for recent devices that have 110Mps speeds. Compatible with WiFi devices and 801.11b devices.

You will also need a variety of network adapters in a wireless network. Each device must be connected to an adapter to communicate with the network. You can also add wired devices to a wireless router, which is often the best method if wiring is possible. Routers contain Ethernet ports for wired devices. Table 8-2 gives a list of the types of adapters you will need in a wireless network.

Your DSL or cable modem connect directly to the router. By using Ethernet cables when possible you reduce the cost of your network because a cable connection is less than the cost of a wireless adapter.

Regardless of a wired or wireless network, the following concept remains the same: You will want to use your Media Center PC as the primary hub that connects to the Internet and serves data to any other computer or device.

Figure 8-1 shows a typical Media Center PC home network configuration.

As you can see, the Media Center PC and the cable modem/DSL modem connect to a router. The router is a device that manages the exchange of data from one device to another in a home network.

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Table 8-2 Wireless Network Hardware

Device	*Connects to Network With*
Media Center PC	Router
Laptop	PCMIA network card or Ethernet cable
Other Desktop PC	USB network adapter, internal network adapter card, or Ethernet cable
Printers	USB network adapter or Ethernet cable
Media Center Extender	USB network adapter or Ethernet cable

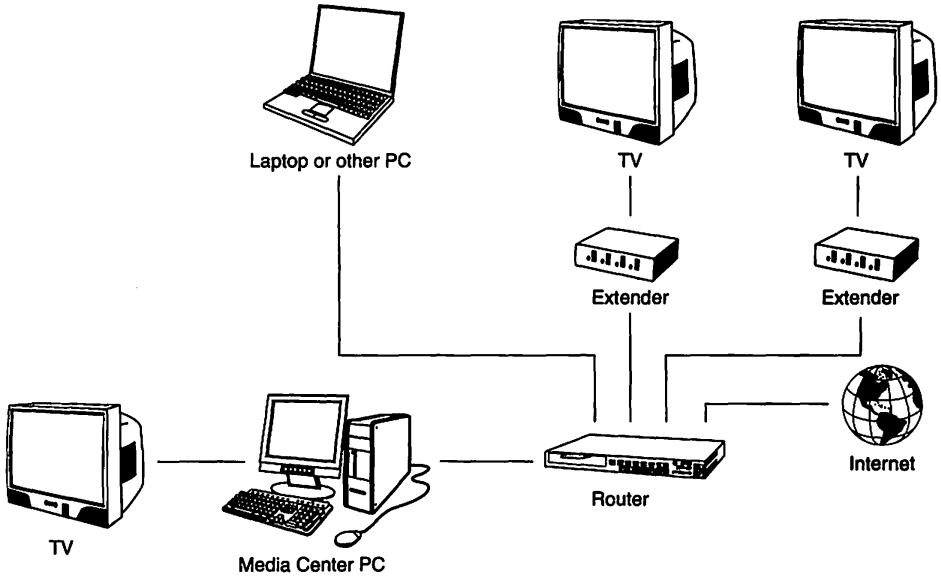


Figure 8-1: Home network with a Media Center PC acting as the hub.

One computer, the Media Center PC, makes the connection to the Internet, and all other devices and computers use that Internet connection. If you are using dial-up service, your Media Center PC is the device that dials to the Internet, and other devices use its connection.

In a wired network, each device connects to the router via an Ethernet cable. In a wireless network, each device (except for the Media Center PC, which connects via an Ethernet cable) connects to a wireless adapter that communicates with the router, and the router can also connect wired devices to the network.

Once all the devices are attached to the network, you can use a networking wizard in Windows XP to establish the connection from the hub to each device and establish the level of file sharing and access to the Internet. Your router and network hardware also come with installation software that will guide you through the process.

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Media Center PC as Network Hub

The description of a home network in the preceding section is very basic. You should use the instructions and installation software that came with your router and network adapters for the installation of the network. It will help you name your network, your computers on the network, and guide you through the process.

Before you even begin such a process, you must think about building it from the diagram shown in Figure 8-1.

Because your Media Center PC is going to put the greatest demands on the Internet (such as Guide updates and downloading music and movies), you are going to want the most direct connection possible to the Internet. You would not want your Media Center PC to be connected to the network wirelessly. Even if it's a wireless network, your hub device has a direct, wired connection to the router and the Internet (phone line, DSL or cable modem).

Because you will be connecting Extenders to the Media Center PC, and because it also has the largest hard drives, it makes sense to have it be the primary "server" that feeds video, music, and picture files to Extender devices.

Note

Whenever possible, you will want to serve media files directly from the computer that has them on the hard drive. That means that you should use your Media Center PC as the primary computer for viewing media files. This provides the most reliable delivery of audio and video, because networks can slow down and affect their play.

It may not always be possible to have your Media Center PC act as the hub due to proximity to your Internet connection or cable/satellite source. If there is no phone line, DSL, or cable/satellite connection where you view TV, you need to connect your Media Center PC to a wireless network being hosted by another computer elsewhere in your home or apartment.

This is not recommended, and you should consider running a phone line or cable line to the location of your Media Center PC, which would solve the problem.

Media Center PC as Entertainment Server

Once you have created your home network, you should consider using your Media Center PC as an entertainment "server."

In a home or apartment, you have a number of entertainment devices: radios, TVs, and stereos. One of the problems in a home setting is that each of those devices has always stood alone. Each TV needed to have its own VCR or DVD player attached to it. Each stereo had to have CDs to play so CDs were scattered in different locations.

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By using your Media Center PC Network, all of that can change. By thinking of your Media Center PC as your entertainment "server" you can connect most all of your entertainment devices and have all of them share the content that resides on the Media Center PC.

Media Serving

Think about recorded TV shows. Using your Media Center PC, you record a show. Your Media Center PC is in your living room. It's late at night and you are in the bedroom and you want to watch the program. With Media Center you can "serve" that recorded program to the bedroom TV as long as it is part of your network.

To continue with this concept, say you wanted to listen to some music as you were falling asleep. Sure, you could turn on the clock radio but it would be great to listen to a "beddy-bye" playlist you put together on the PC. If your bedroom TV was a part of the network you could listen to music from Media Center through your TV. All of your music would be available.

The same holds true for pictures, home videos, and all of the media files you have hosted on your Media Center PC. It is also be true for all the rooms where you have networked a PC or a TV connected to an Extender device.

It's easy to understand how a computer connected to the network can access music, but how can a TV do it? Let's take a look at Extenders.

Media Center Extender Devices

The whole concept behind serving data is to have one primary device with lots of storage serve to other devices that have little or no storage of their own. Most office computing is based on this concept. There is one big, expensive server that hosts all the data, and *terminals* connect to it and access that data. The terminals don't have any data stored on them.

An Extender device turns any TV into a terminal in a home entertainment network. It accesses media content from the Media Center PC server and plays it on a TV.

As a very small Windows CE-based device, the Extender has enough computing power to display the Media Center user interface and interact with the network. It doesn't have any data storage, and it is dedicated to being a terminal on the network.

The benefit to you is amazing. It turns any TV anywhere in the home into a Media Center terminal that can play all of your TV shows, music, pictures, and videos. It can also schedule programs for recording since it can display the Program Guide.



Note

Media Center Extenders only allow access to Media Center, not Windows XP itself, but that is exactly what you want from them. For general computing on the network, you will need to use a PC.

Once you have Extenders in place, it will change the way you think of your home entertainment. The low cost of Extenders and the low cost of TVs allow the creation of a Media Center terminal anywhere in your home.

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Installing a Media Center Extender

Media Center Extenders are available from several manufacturers—just like Media Center PCs. Even though they may have different external shapes, all share common connections and front-panel controls. Each is designed to connect to your PC through a wired or wireless network connection, connect to your TV, and be controlled with a supplied Media Center remote control or the front-panel controls on the unit.

When you purchase an Extender, it comes with most of connectors you will need, as shown in Figure 8-2. In addition to the Extender, it comes with a Media Center remote control, a power adapter, network cable, and audio and video cables for connection to your TV.



Figure 8-2: Items included with a Media Center Extender.

Figure 8-3 shows the front panel of an Extender. The key controls are a power button, a direction keypad with a select button, a back button, the familiar Green Button that takes you to Media Center's Start Screen, and an IR window to receive signals from the remote control.

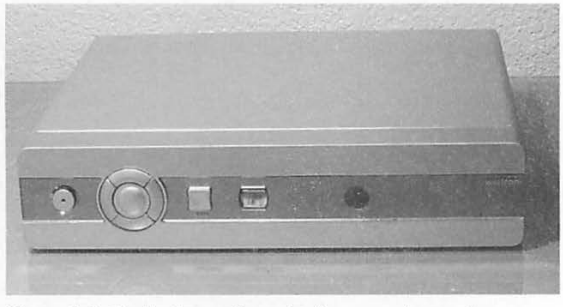


Figure 8-3: Media Center Extender front-panel controls.

The back panel of the Extender, shown in Figure 8-4, provides a number of connections, including the following:

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- Power jack for connection to an AC power cord
- USB connectors
- Component video connectors for TVs that have component video-in
- Composite video connector
- RCA-style stereo audio connectors
- S-Video connector for TVs that have S-Video-in
- An optical digital audio connector for surround sound systems
- Ethernet jack for network connections

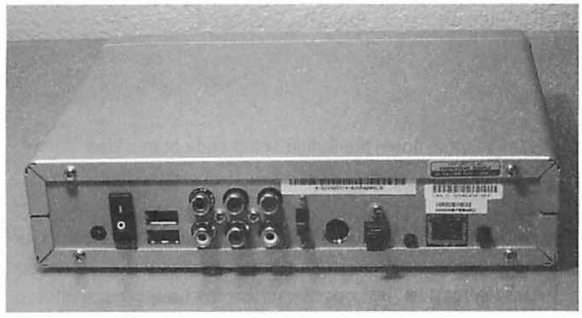


Figure 8-4: Back panel of Extender showing connectors.

Making Extender Connections

The first step to installing the Extender is to connect it to your TV. Examine your set to see what type of available connectors it has for video-in. The best quality comes from using a component or S-Video connection if available. If your TV does not have either of those connectors and only has a component video-in jack, you will need to use that.

Note

If your TV has only a standard antenna connection, be advised that the quality from that connection may not be satisfactory. If that is your only choice, you can purchase an adapter from a electronics store such as Radio Shack to convert component video to RF, which is the term used for the antenna connection on your TV.

After making the appropriate connection for video, connect either the RCA-type stereo connectors to the audio-in jacks on your TV, or, if you are using a surround sound system, connect the digital audio connection on the Extender to your surround sound system.

The next step is to make the network connection from your PC to the Extender.

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If you are connecting it using a wired home network, using the provided Ethernet cable, connect the Extender to your home network (router, hub, or wireless router) or directly to your PC's Ethernet port.

If you are using a wireless home network, be sure that your Media Center Extender is set to the "wireless" setting on the back panel (be sure to check the instructions that come with your device for this setting switch). Your Media Center Extender model may have come equipped with wireless networking. If so, you will not need to attach a network adapter to it.

After making the connections for audio, video, and network, you are ready to affiliate your Extender to your Media Center PC.

Network Connection

Once the Extender is connected to your TV, turn both the Extender and the TV on. Be sure that you have your TV tuned to the video connection that the Extender is connected to. You will see an initial screen on the TV from the Extender with an 8-digit setup code that you will need.

Note

If your TV is not within sight of your PC, it is a good idea to write down the 8-digit setup code at this time.

Next, insert the CD that came with the Extender into your PC and run the installation software. The installation wizard will take you through a simple process of making a network connection between the PC and the Extender. Figure 8-5 shows the first screen in the process, where you read the licensing agreement.

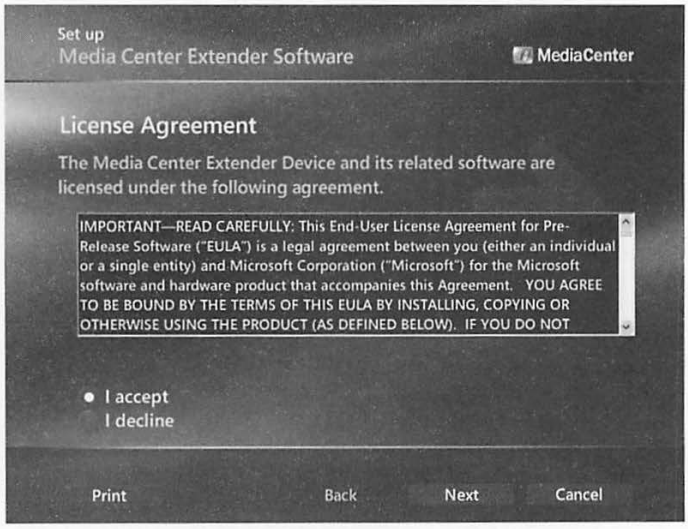


Figure 8-5: First screen in the setup process.

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After accepting the license, the next screen, shown in Figure 8-6, asks you to enter the 8-digit code that is displayed on your TV from the Extender. Enter the code and click the Next button.

Note

If your Extender is not displaying the code or if there is no screen displayed on the TV, try pressing the reset button on the device for 10 seconds and turning the power on and off. You may also need to consult the owner's manual in case the model you have chosen has a different setup screen.

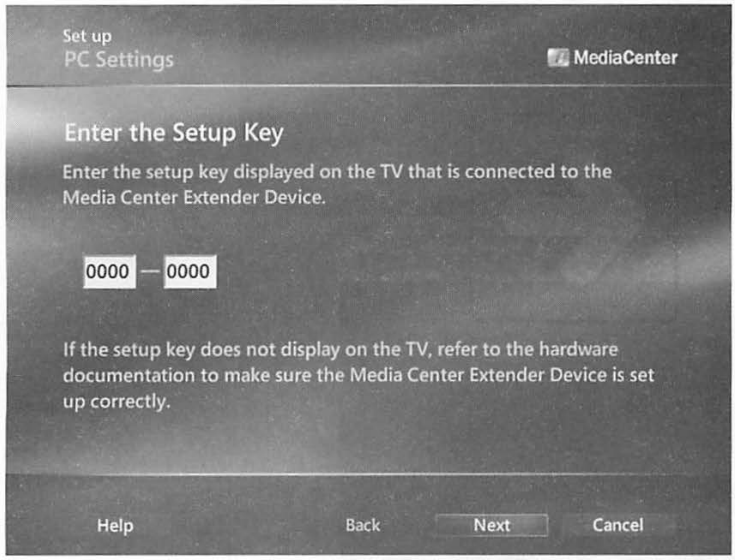


Figure 8-6: Enter the 8-digit code from the Extender device screen from your TV.

After accepting the code, the next screen in the process has you identify which type of network you are using for the installation—wired or wireless—as shown in Figure 8-7. Select which type of network you are using, and the system looks for the Extender on the network.

Once the device has been recognized by the network and the installation wizard has identified it, you need to enter a Product Activation Key number. This number should be located on your installation CD or your product manual. Enter the key, which is a combination of letters and numbers, to activate the Extender as shown in Figure 8-8.

At this time, your TV screen changes from the initial setup screen to indicate that it is searching for a connection with Media Center. This is normal and as you go through the setup process the TV screen responds to actions being taken on the PC during setup. You will not need to interact with the TV screens but it is good to note if any error messages are displayed that may indicate an installation error.

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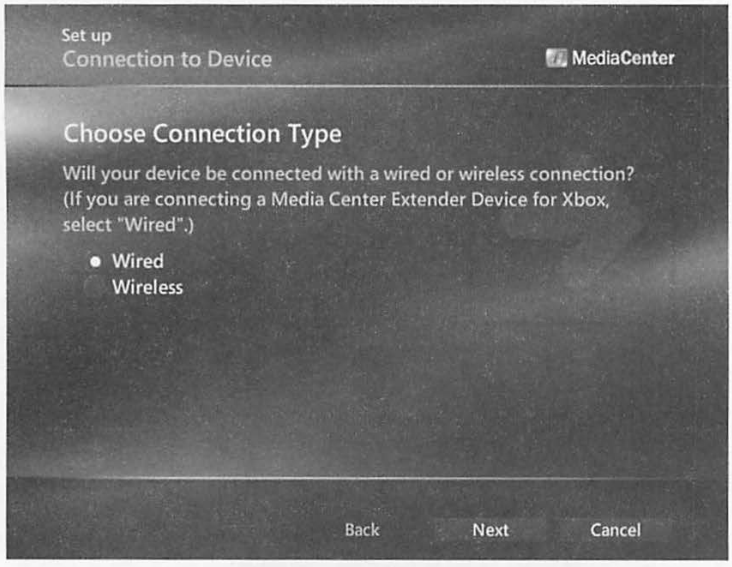


Figure 8-7: Select the type of network your Extender is connected to.

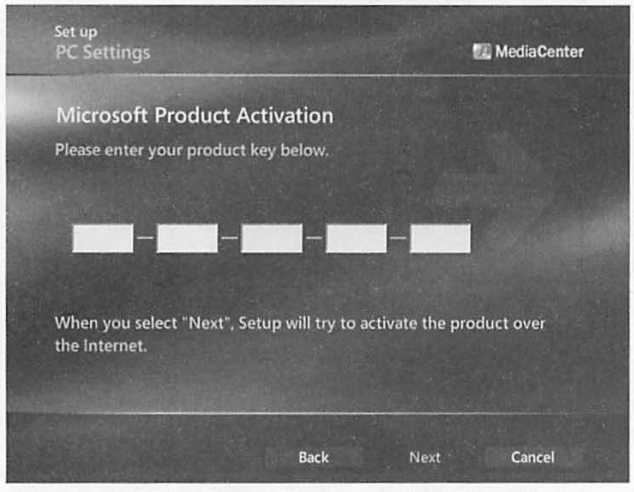


Figure 8-8: Enter the Product Activation Key when prompted.

Figure 8-9 shows the next screen in the process, which informs you that in order to use an Extender, Remote Desktop and Fast User Switching need to be enabled. When you click Next, the installation wizard turns them on for you. This is good to know—if you explore your system settings at a later time and discover that they have been turned on, you will know they are required by the Extender.

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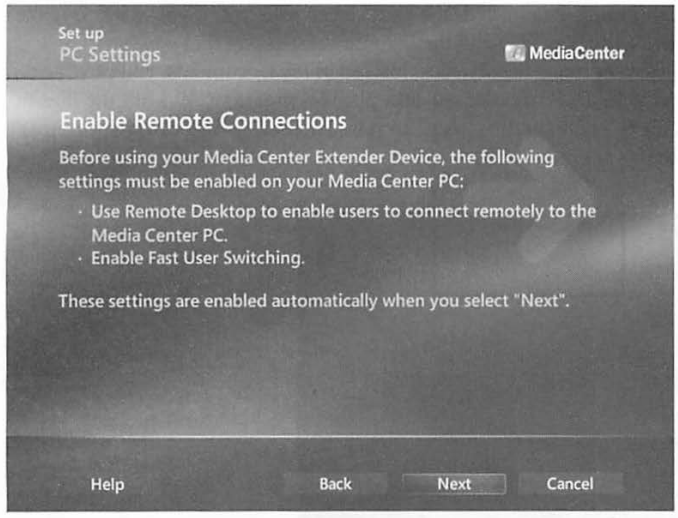


Figure 8-9: Remote Desktop and Fast User Switching are turned on for you.

Network security issues are addressed in the next screen, shown in Figure 8-10. In order for the Extender to interact with Media Center in the network, several ports need to be opened in the PC's firewall. With an enabled firewall, ports allow communication with other devices and are used to control access in and out of your system. The installation wizard creates the required ports to allow interaction between Media Center and the Extender.

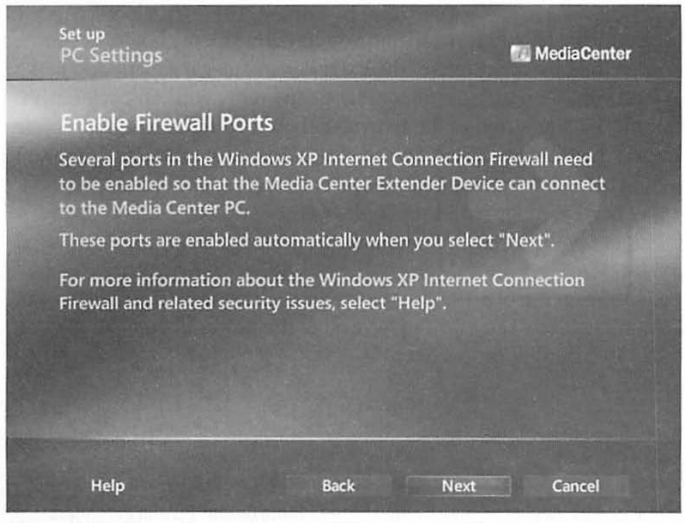


Figure 8-10: Firewall ports are created in your network.

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With the network and firewall settings established, the next screen asks you if you want to make the contents of your My Documents folder available to the Extender. Assuming that you have content such as photos and music (or at least shortcuts to such files) located in My Documents, you can decide if other users can have access to them. The Extender will still play TV programs, but not the files in that folder if you choose No. Figure 8-11 shows the screen; for now, choose Yes. You can always return to the Settings folder and change this selection.

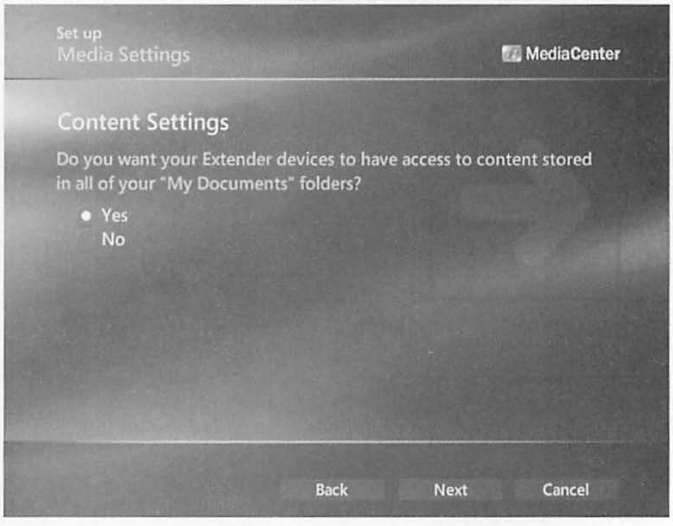


Figure 8-11: Controlling access to files in your My Documents folder.

At this point, you have completed the installation wizard and you have one more choice, as shown in Figure 8-12. You can choose to visit the Device Settings of the Extender and give it a name and make any other changes you want. Because you can return to the settings at any time, you can click Finish.

With the installation complete, the TV connected to the Extender should go through a short cycle of connecting with Media Center and then display a Start Screen almost identical to Media Center on your PC. What is actually happening is the Extender is pulling content from the PC and displaying it on your TV. In just about every way, the Extender replicates Media Center on your TV. You can view your photos and videos, access Online Spotlight, listen to the radio or your music library, and watch live or recorded TV shows.

Figure 8-13 shows an Extender sitting on top of a TV with the Media Center Start Screen displayed. With a home network, Media Center Extenders allow you to have all of the power of your PC playing on almost any TV—as long as it has an Extender connected to it.

Note

You can have several Extenders powering Media Center in your home, but remember, with only two TV tuners there is a limit of two live TV stations that can be viewed at any one time by the Media Center PC and Extenders. You can play an unlimited number of recorded TV shows, photo, video, or music files across devices.

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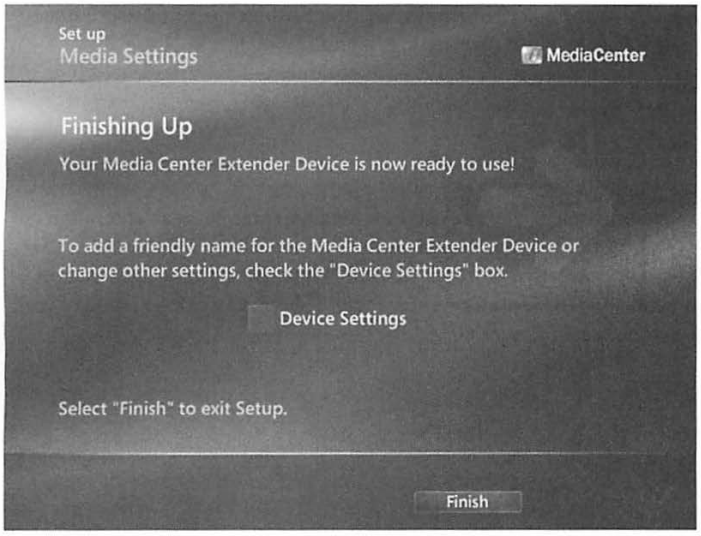


Figure 8-12: The last screen in the Extender Setup Wizard.

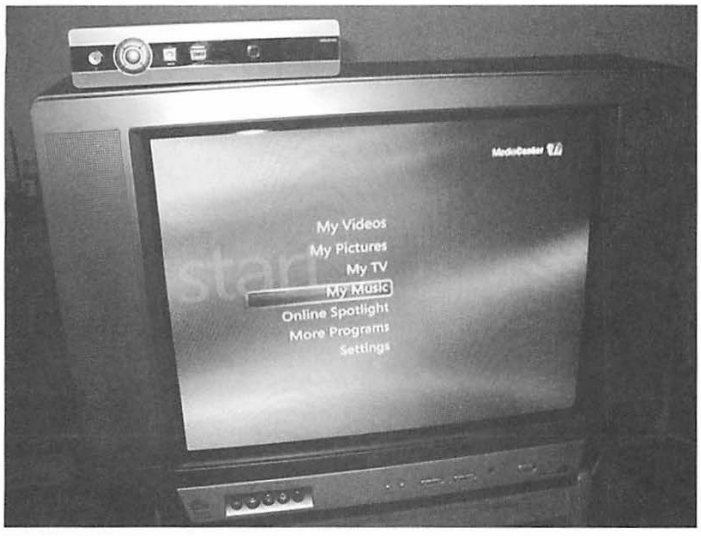


Figure 8-13: Media Center Start Screen on a TV connected to an Extender.

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If you want to make changes to your Extender settings, use the Settings menu on the Extender device you want to change. Each Extender has it own settings menu.

Summary

By creating a home network, wired or wireless, you can use your Media Center PC as an entertainment server. As the hub of a network in your home, your Media Center PC can deliver TV, recorded shows, home videos, music, and pictures to virtually any room in your home. By using a combination of additional computers and TVs connected to Media Center Extender devices, you can access all of your media content from one source—the Media Center PC.

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Part III

Watching and Recording TV: Playing and Burning DVDs

Chapter 9
My TV and the Program Guide

Chapter 10
Recording and Playback of TV Programs

Chapter 11
Playing and Burning DVDs

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Chapter 9

My TV and the Program Guide



To really understand what a Media Center PC is all about, if your PC is equipped with single or dual TV tuner cards, launch Media Center, go to My TV, and watch TV. Sit back and use the remote control. Change channels, adjust the volume, and get more information about the program you are watching. Pretty soon, especially if you are using a TV to view Media Center, you will forget you are using a personal computer. If Microsoft has done its job right, that's exactly what should happen.

Before the arrival of Media Center PCs it was possible to watch TV, DVDs, and videos on a personal computer. However, viewing them on a computer monitor was not very TV-like. The video didn't look the same as a TV and the overall experience was complex and very computer-like. Watching TV should be enjoyable and as easy to operate as simply using a remote control. Media Center PCs have made that a reality.

By using a process called *video de-interlacing*, Media Center addresses the fundamental difference between a TV display and a computer monitor—interlaced versus non-interlaced. TVs actually create the screen you see by making two sets of images appear as one. To create a smooth, flicker-free image at the slow refresh rate of TVs, the screen is *painted* in two sets of scan lines, odd and even. The result is an image that is jitter-free and good for motion—but not for small items and detail.

Computer monitors are great at detail. Small type and details on the screen require high resolutions and fast scan rates (more than double that of TV even on old VGA monitors). They do not interlace the image. What is good for type and detail on the computer display doesn't make for good TV viewing. TV on a computer monitor just doesn't look right. Media Center processes TV video in a number of ways that make it look like "TV" on a computer monitor in addition to TVs. Featuring *video scaling*, Media Center also allows TV to be displayed at virtually any resolution and still look good.

A good test is to view a TV program playing in Media Center on a high-resolution computer monitor full-screen. A TV shows the image at 320 × 240. The computer monitor may be at a much higher resolution, such as 1024 × 768. From 10 feet away, the picture should look the same on either display. It should also look good when you get a foot away from the computer monitor. Media Center is optimizing the image for the device you are viewing in real time.

Fast computer processors and dedicated video processors make this possible. So, whether you are using your high-resolution computer monitor or your regular TV connected to your Media Center PC, this chapter covers setting up My TV in Media Center, controlling TV viewing, and using the Program Guide.

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Display Configuration and Calibration

Media Center enables you to change the overall contrast, weight of type displayed on the screen, and even the size of fonts on the screen.

It also enables you to establish what type of computer monitor or TV you will be using. Computer monitors can be traditional "tube" displays (cathode-ray tubes, or CRTs) or newer flat-panel monitors such as liquid crystal displays (LCDs). TVs can be standard CRTs, flat panels such as LCD, or new flat-panel plasma TVs or projection TVs. By choosing which type of display you are using, Media Center can deliver the sharpest, most pleasing picture. There are also a number of tools for adjusting your display—its color, contrast, image size, position, and brightness. At the end of the calibration process you will have fine-tuned both Media Center and your display.

Display Configuration Setup

Following the "wizard" metaphor used to perform complex setups in a simple step-by-step process used in Windows XP, Media Center has a number of wizards for making TV adjustments. The first wizard you will want to use is the Display Calibration Wizard. You reach it by selecting Settings from the Start Screen, then TV, then Configure Your TV or Monitor. That brings you to the start of the process as shown in Figure 9-1.



Figure 9-1: The first Display Configuration screen.

The first screen explains that Media Center will make adjustments to the way things look on your display based on information you provide about it in the next few screens. After that, you will be able to make further adjustments to your display using its own controls.

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All you really need to know at this point is what type of display you will be using as your primary display. If you are using multiple displays, such as a computer monitor and a TV connected to your PC at the same time, you should enter information for the one you will be viewing Media Center on most.

Figure 9-2 shows the different types of displays that Media Center can make adjustments for. It is important to note that in the rapidly changing world of displays, some of the categories can apply to either a TV or a computer monitor. The choices are as follows:

- **Traditional TV or monitor:** A "tube" style display often referred to as a CRT (cathode ray tube).
- **Flat Panel:** A flat-panel LCD (liquid crystal display) computer monitor or TV, and also a flat-panel plasma TV or computer monitor.
- **Rear projection:** Almost always a TV.
- **Front projection:** Most often a computer projector that can actually be used for TV viewing as well.

The preceding list contains a pretty much every category of display available today, so you should find the one that describes your primary display. Select it and you are brought to the screen shown in Figure 9-2.

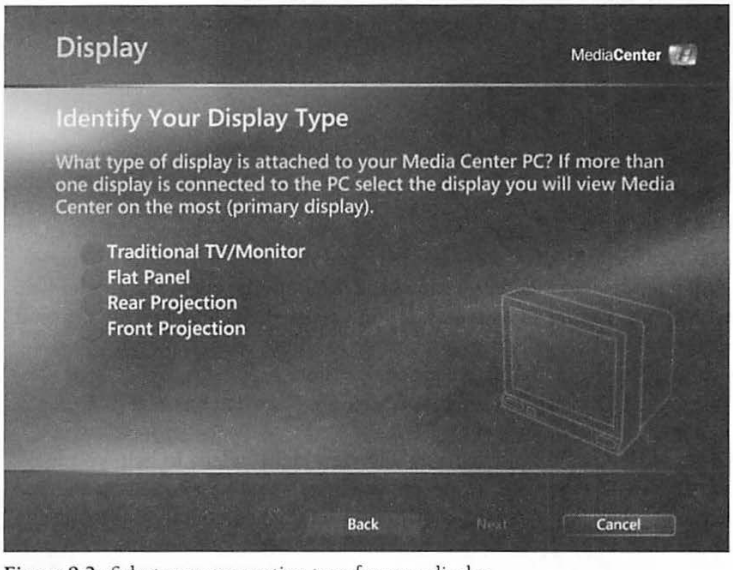


Figure 9-2: Select your connection type for your display.

A number of different connectors are used in displays. Computer monitors will most likely use a VGA connection, although newer computer monitors have begun using DVI (digital video interface)

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connections rather than VGA. TVs will most often use a composite or S-Video connection, with newer LCD and plasma TVs using component or DVI connectors as well.

When choosing a connector, if your display has different choices, the first choice should be DVI, component, or S-Video for TVs. If your TV has none of those, then use the component connector. For computer monitors, if you have a choice use DVI if available and VGA if that is the only connector. Figure 9-3 shows the menu for Connection Type. Note that illustrations of the type of connector your components use are shown to help make a selection.

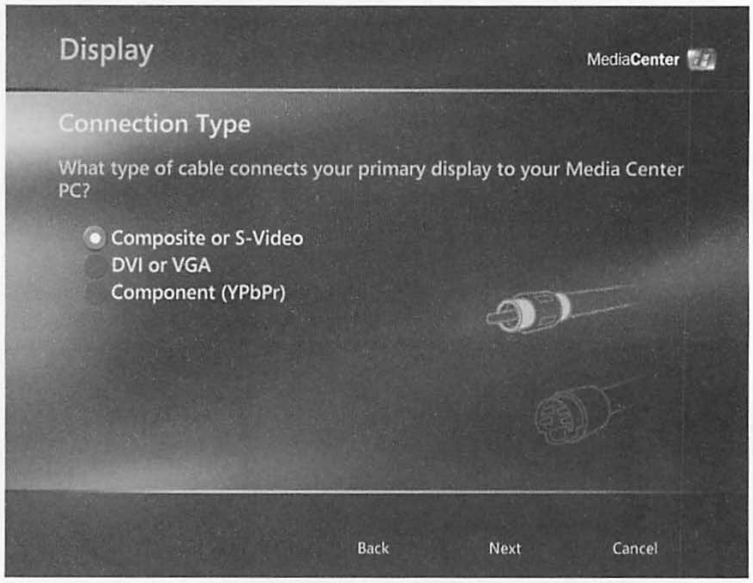


Figure 9-3: Connection Type menu.

With the information you provided, Media Center can help you manually adjust the brightness, contrast, and other settings of your display. Figure 9-4 shows the choice of having Media Center help you or finishing the wizard without making adjustments. If you choose the Adjust Display Controls option, you move to a series of videos that will act as a reference to adjust your display. If you want, you can exit the wizard without going through this process at this time.

Choosing to proceed brings you to the Display Calibration screen as shown in Figure 9-5. To begin, click the Next button.

For each of the adjustment procedures that follow, you will view short videos to help you make manual adjustments to your display. The videos show people sitting in a family room setting and also playing pool. There is a purpose to these settings. The family room setting has a number of colors and shapes that will be used in the calibration process, and pool balls are used to ensure that the aspect ratio of your display is correct—that round shapes are circles and not ellipses. These scenes will be used again and again and colors and shapes will become an easy and familiar set of references for you.

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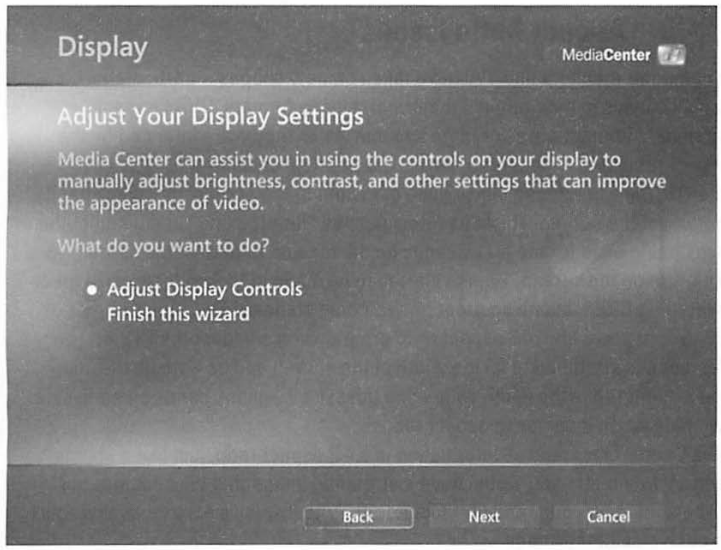


Figure 9-4: Adjust Your Display Settings menu.

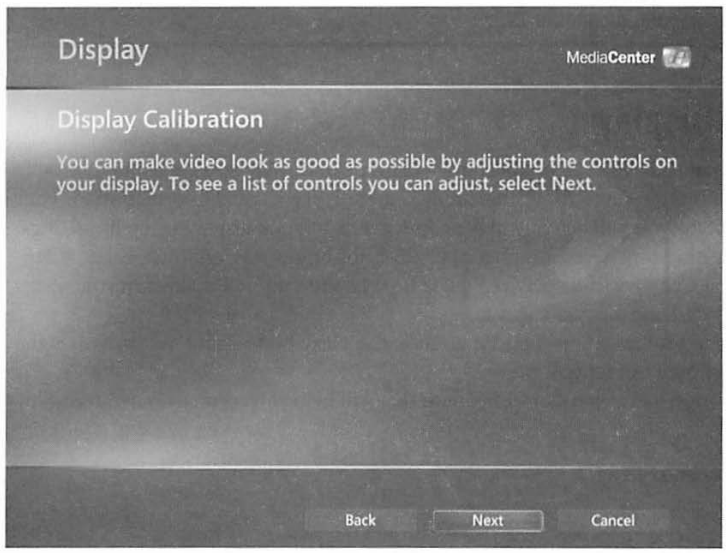


Figure 9-5: Choose Next from the Display Calibration menu to make further adjustments.

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Aspect Ratio Issues

In the past few years both computer monitors and TVs have taken on new shapes—particularly widescreen formats. To display movies in their original theatrical release formats, DVDs became available in widescreen versions. Although it was great to see movies as they were intended by the director, TVs are in a 4:3 aspect ratio, and widescreen movies are in a 16:9 aspect ratio.

When shown on a regular TV, the widescreen movie filled the width of the screen, and black bands appeared on the top and bottom of the screen. This was referred to as "letterboxing" and much of the actual image information was being used for the black bands on the top and bottom of the screen. To put more detail and actual picture on the screen, TV sets started to be made in 16:9 widescreen aspect ratios. This was great for watching DVDs, but no so great for watching standard TV.

One of two things happen when you watch 4:3 aspect ratio programs on a widescreen TV or computer monitors—the 4:3 video is stretched to fill the width of the screen and as a result the image is distorted, or the 4:3 image is centered in the width with—you guessed it—black bands on each side of the image. There is no winning when it comes to aspect ratios!

The first release of Media Center presented all information in a 4:3 aspect ratio, just like a standard TV. If you used a widescreen TV or monitor you would have a stretched image that was distorted or you would have to change the setting on your computer monitor or TV to display a 4:3 true aspect ratio with vertical black bars on each side of the image.

The good news is that with starting with the release of Media Center 2004, widescreen support is a part of the system. Rather than stretching or changing settings on your display, you set Media Center for the correct aspect ratio and it fills the display correctly and fills in the top or side areas without the black bars. For this reason, it is important to go through the display calibration process and establish the display width for your computer monitor or TV.

Calibrating Your Display

Until this point, all of the menus have been establishing what type of display you are using to be able to take you to a series of calibration routines where Media Center displays visual information for your particular display. At this point you will actually make adjustments to your display using its settings.

Most TVs and computer monitors have a number of controls for brightness, contrast, color, sharpness, and image size. Media Center will display reference images and you will make adjustments to match your display to the reference images.

After making your choice for the connection type, click the Next button and you arrive at the Display Calibration menu shown in Figure 9-6.

From the Display Calibration menu you can view videos that will help you correctly set your display for:

- Onscreen Centering and Sizing
- Aspect Ratio (Shape)
- Brightness (Black and Shadow)
- Contrast (White)
- RGB Color Balance

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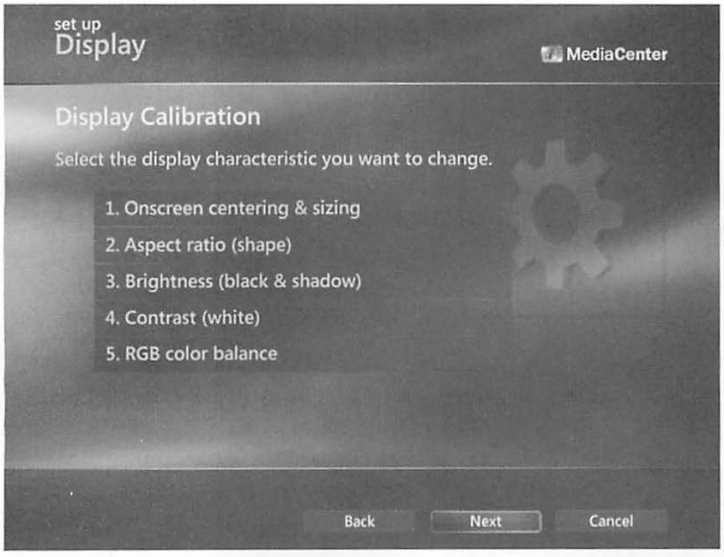


Figure 9-6: The Display Calibration tests menu.

The calibration process is pretty simple, but you need to be sure to familiarize yourself with how your TV or computer monitor makes display adjustments.

Computer monitors will most often have display adjustments from the front panel of the display. From a Menu button you should be able to find controls for brightness, contrast, and color, plus controls for image size and position on the screen. The controls can be tedious to use and it is a good idea to play with them a bit to get used to how they operate.

TVs will most likely use a Menu button on the remote control to make adjustments. Although there will be options to adjust color, brightness, and contrast, there may not be any adjustments for image size or positioning on the screen. TVs are designed to fill the screen fully and maintain a consistent aspect ratio.

After familiarizing yourself with your display controls you are ready to fine-tune it using the videos from the Display Calibration menu. Each test takes your through three steps. The first step shows a screen that tells you what the test covers, the next screen explains how to make the adjustments on your display, and the third screen shows a self-repeating video to view as you make any adjustments. To stop the video, press the Esc key on the keyboard or the Back button on your remote control.

Figure 9-7 shows the first test to send to your display—On-screen Centering and Sizing. This may apply more to computer displays than TVs, but it is good to view to ensure that your TV is displaying the information correctly.

The test plays a full-screen video with an inset window showing how the video should fill the display if it is adjusted properly. If it is not displaying properly, use the width, height, and horizontal and vertical position adjustments on your display to get the screen to match the inset video. It is possible to adjust the width or height of the video to be too wide or tall in an attempt to fill the screen fully. This could result in the aspect ratio being incorrect. A typical example would be attempting to fill a 4:3 aspect ratio video on a 16:9 aspect ratio display. Everything would be too wide.

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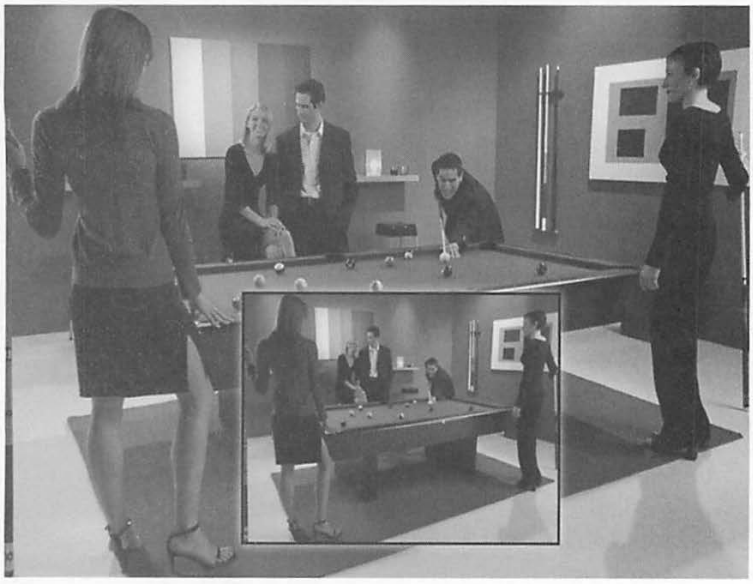


Figure 9-7: The On-screen Centering and Sizing test.

The next test helps with that situation. The Aspect Ratio test, shown in Figure 9-8, enables you to continue to use the same set of controls used in the on-screen centering and sizing process to make sure that squares are square and circles are fully round and not elliptical.

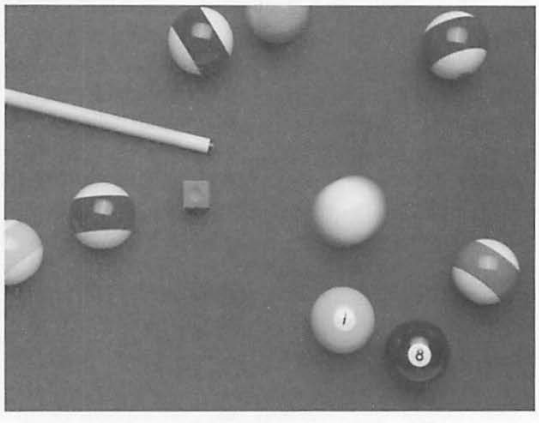


Figure 9-8: The Aspect Ratio (Shape) test.

The video shows pool balls and a square cube of chalk. If properly adjusted, the pool balls should appear to be perfectly round and the chalk should be a perfect square. The white cue ball will be moving and it should also look round as it streaks past. Once you have made the adjustments for centering, size, and aspect ratio you are ready to move to tests that adjust the image quality.

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Figure 9-9 shows the test for brightness. This test applies equally to both TVs and computer monitors. The test shows a man in a black suit with a black shirt and tie standing in front of background containing a solid white and a solid black area. In the black area of the background there is an "X" moving in the area. The X is black too.

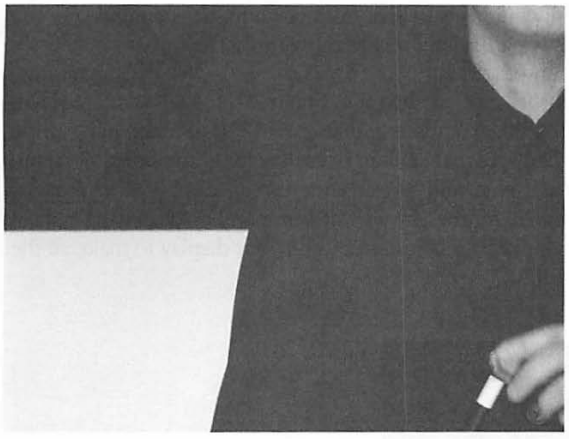


Figure 9-9: The Brightness test.

If the brightness on your display is adjusted correctly, the man's suit should appear black, not gray. The tie and shirt should also appear black with some highlights and detail, and you should be able to distinguish the shirt from the suit. The X moving in the background should be barely visible and, once again, black, not gray. The image should be bright enough to see the suit and the shirt. If the suit is gray, or you can see the X moving and it is gray rather than black, adjust the brightness on your display to make the grays appear black.

Figure 9-10 shows the next test, which is for contrast. This setting affects the level and clarity of white in the image.

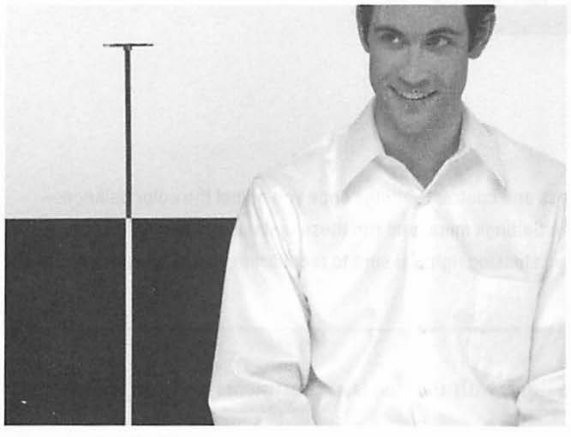


Figure 9-10: The Contrast test.

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Contrast affects the overall image and also provides detail and clarity in general. It helps distinguish details in areas of similar tones and colors and is one of the most important display adjustments along with brightness.

In this test you see a man in a white shirt. The shirt has wrinkles and details. Turn up the contrast as high as possible without losing the shadows, wrinkles, or details in the shirt. There is also a pool cue in the background. It is both black and white. Be sure that once you adjust the contrast the cue stick is perfectly straight and smooth. This is particularly important with CRT displays where there can be a great variation of brightness and contrast.

The final calibration test is for RGB color balance, as shown in Figure 9-11. RGB stands for red, green, and blue, which are the three colors used by computer monitors and TVs to make all colors by combining varying percentages of each. When an equal amount of each color is combined, it makes gray. For example, 50 percent red, 50 percent blue, and 50 percent green creates 50 percent black, which is gray. This test makes sure that the RGB settings are adjusted properly by displaying a set of gray bars. To adjust your display color, you adjust the color settings on your display to make all the bars appear in shades of gray with no color tint.

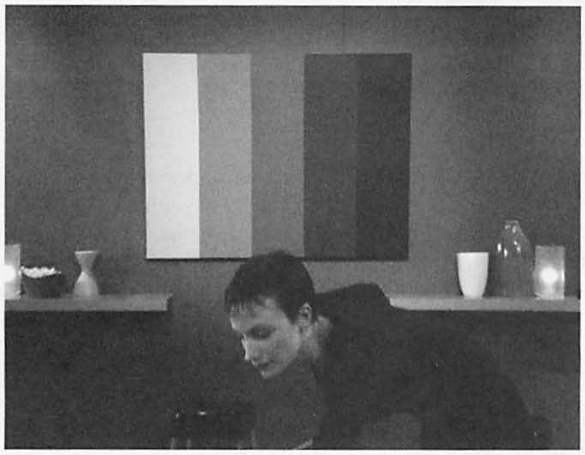


Figure 9-11: The RGB Color Balance test.

Note

You may need to go back and adjust the brightness and contrast settings once you adjust the color balance—they do affect each other. You can go back to the Settings menu and run these tests at any time in the future, so if you notice that your TV show or pictures aren't looking right, be sure to recalibrate your display using this wizard.

After completing the RGB test, you are done with the display adjustments and can move on to setting up your Program Guide.

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Setting Up My TV

Setting up the Program Guide does more than populate the on-screen guide with TV listings and information—it creates your channel lineup. The channel lineup is the list of stations that you can view on your Media Center PC.

Although it may seem like a lot of work to set up My TV, the effort will pay off as you move to the next steps of watching TV and using the Program Guide.

Getting Program Guide Information

To begin the setup of your Program Guide and channel lineup, select Settings from the Start Screen and then click Guide from the Settings menu. You are brought to the screen shown in Figure 9-12.

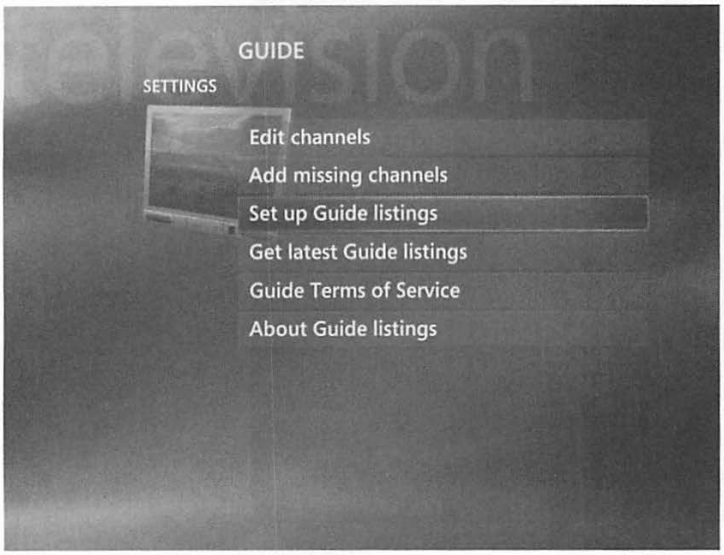


Figure 9-12: The first Program Guide setup menu.

From the Guide Settings menu, select Set up Guide Listings. This takes you through the process of identifying your TV service provider and getting Program Guide data. You will need to be connected to the Internet during the process.

After an initial screen detailing that you are about to set up your Program Guide, the next screen gives you the chance to read a privacy statement relating to use of the Program Guide. As covered earlier in the book, to provide you with TV information Microsoft needs to know where you are located and what channels you have access to. Because this information must be collected and stored to update your Program Guide on a regular basis, there is a privacy statement for you to read on the Program Guide setup screen. After reviewing it, if you agree to its terms you can select to use the Program Guide by clicking the Yes button at the bottom of the screen and then clicking Next.

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You will need to review yet another legal document on the next screen in the process. It displays the Terms of Service and explains that Microsoft is providing the service and that sometimes the data may be wrong or the information may not be available. People depend on the Program Guide to record their favorite shows or stay home to catch an important program. When the Program Guide is wrong it does have an impact on such situations, and the Terms of Service acts as an agreement between the user (you) and Microsoft by stating that you can't sue them if the missing or inaccurate data causes you to miss the latest episode of *ER*, for example.

Assuming that you are okay with the Terms of Service, click Yes and you proceed to a screen that asks you for your Zip code, as shown in Figure 9-13. Your Zip code is used to identify the local channels and TV service providers where you are located and also to identify the localized lineups of satellite services.

As soon as you enter your Zip code, the download of channel information begins.

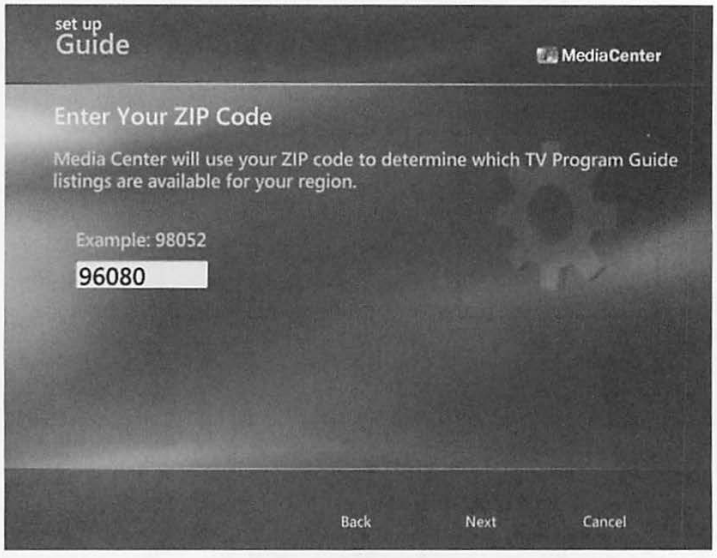


Figure 9-13: Enter your Zip code to locate your local broadcast, cable, and satellite channels.

Note

You will of course need to be connected to the Internet to download channel information. If you are not already connected, there will be a prompt telling you that you need an Internet connection to continue.

The next screen states that Media Center is collecting Provider Information. This will take a few minutes—quite a few minutes if you're using a dial-up connection to the Internet. Once the download is complete, you can proceed to the next step as shown in Figure 9-14.

Depending on whether you have cable, satellite, or use the local broadcast stations via an antenna, you will see a list of providers on the Select TV Signal Provider menu. If you choose satellite, for

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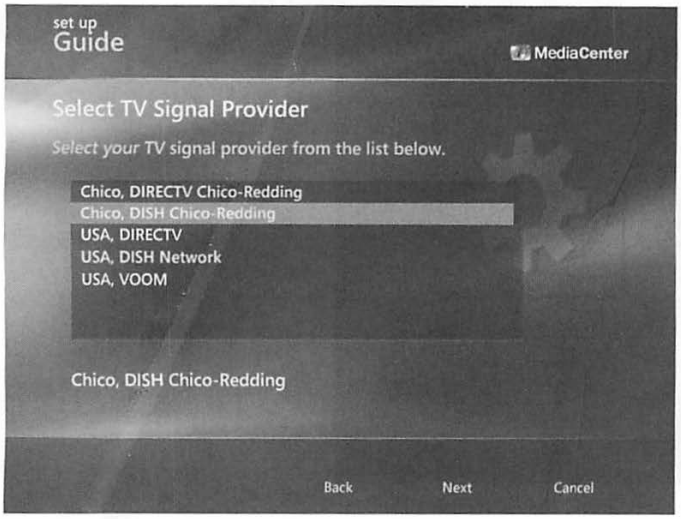


Figure 9-14: The Select TV Signal Provider menu.

example, you will see DirecTV, Dish National, and a regional version of Dish if that is available at your location. Choose the TV service that you use and click Next.

Media Center begins downloading programming information, and again, you must be connected to the Internet for this to happen—it will prompt you to connect if needed. After the download is complete, you will see a final screen that states that you are done.

Editing Your Channel List

Once you have made your initial Program Guide settings, you may want to edit your channel list. For example, there are often channels that you don't like, don't receive well (when using an antenna), or don't subscribe to (in the case of satellite or cable). Rather than view all the program listings for unwanted channels in the Program Guide and having to channel up and down through them while watching TV, you can remove them.

To do so, return to the Guide Settings menu and select Edit Channels. You see the screen shown in Figure 9-15, which you can use to edit the list. As you can see, with more than 700 channels, a service such as a satellite dish needs to be trimmed down to only the channels you subscribe to or watch regularly.

From the Guide Settings menu, there are also options to add missing channels and to get Program Guide data, which is handy when you use dial-up to get listings.

Note

This is important if you are using dial-up service to connect to the Internet. If you choose the automatic method, each time you start Media Center your computer will be engaged in dialing up the Internet and downloading TV information. This may not be practical or desirable.

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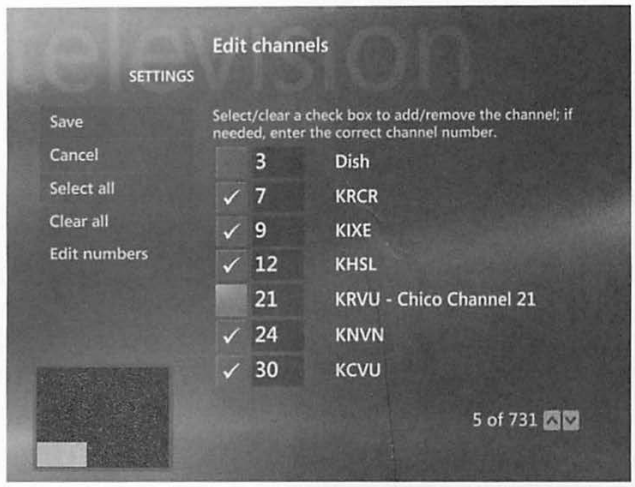


Figure 9-15: You can add or remove channels from your channel lineup.

Watching Live TV

With the setup process completed, you can start watching TV. From your remote control, scroll to My TV from the Media Center Start Screen. Once you have My TV highlighted, it presents TV Shortcuts, which are quick ways to go directly to live TV, recorded TV, or even a list of movies that are playing on TV. These shortcut options are shown in Figure 9-16.

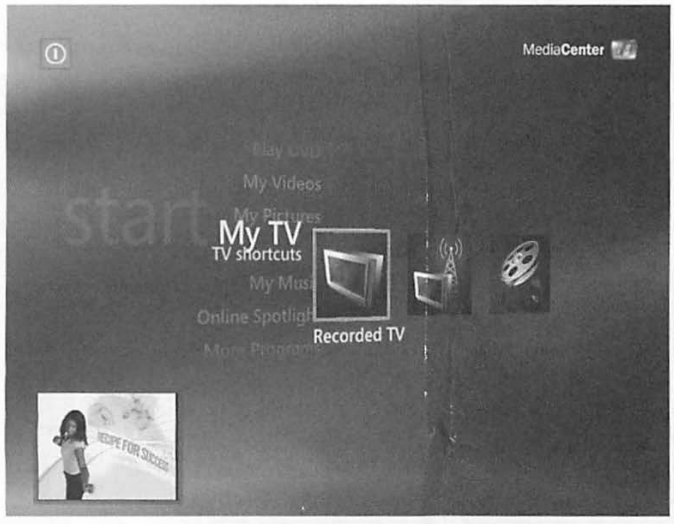


Figure 9-16: TV Shortcuts pop-up when you cursor to My TV.

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Move back to the My TV button and select it as your first step in watching TV. There are a number of items on the My TV screen, and all of them are actionable. You can click just about anything on the screen to navigate further. Let's take a look at each item on the screen, as shown in Figure 9-17.

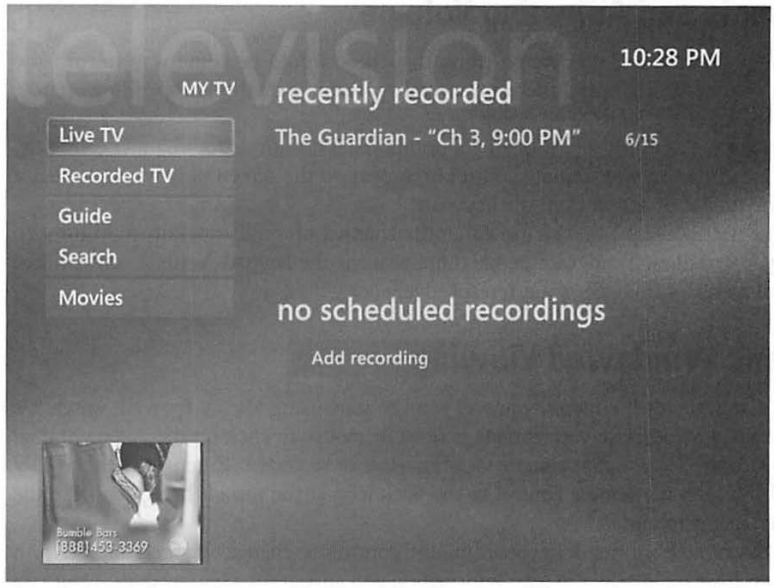


Figure 9-17: The My TV menu.

- **Now Playing Window:** The bottom left of the screen contains a video window that displays either a live TV channel or a recorded TV program. Clicking on the Now Playing window switches the viewing of the program to full screen.
- **Recently Recorded:** Lists any shows that have been recorded. Clicking on one takes you to a menu where you can learn more about the show, play it, delete it, and decide how long to keep the recording.
- **Scheduled Recordings:** Lists any scheduled recordings. Clicking on one enables you to find out about the show, cancel the recording, or prioritize it.
- **The My TV list:** In the upper left of the My TV screen is the list that includes the following items:
  - **Live TV:** Click this button to switch to full-screen viewing of TV.
  - **Recorded TV:** This button takes you to a full listing of recorded TV shows and enables you to sort them, schedule new recordings, and view shows that are scheduled to be recorded.
  - **Guide:** The Guide button enables you to switch to the Program Guide.
  - **Search:** To find a TV program, the Search button takes you to an on-screen search menu that can be easily worked from a keyboard—or from a remote control. You can use a variety of search criteria to find the shows you want.

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- **Movies:** This button takes you to a list of movies that are playing on your channel lineup, and from the menu you can schedule recordings of them and learn more about them. The list also includes movie poster/DVD cover art for movies if available.

Turning Channels and Adjusting Volume

With all of those buttons and items, you would think that there would be some way to turn the channel or adjust the volume! Don't worry; there are several very simple methods depending on how you are controlling Media Center.

To keep the screen simple and just like watching a traditional TV, buttons for channel changing, volume, and muting are either on your remote control or appear on the screen only when there is a slight movement of the mouse or action from the keyboard.

If you are using a remote control, you can use either the channel up or channel down buttons to change channels, or you can directly enter a channel number using the keypad. Volume controls and a mute key enable you adjust or mute the sound, respectively.

Full-Screen and Windowed Viewing

After getting used to using the My TV menu, you will want to start using My TV to, well, watch TV. This is as easy as described earlier. Use your remote control or mouse to click on the video window and your screen fills with the TV program you are viewing—live or recorded. To return to the My TV menu, use the Back button on the remote control or the Back icon at the top of the screen from the desktop controls when using a mouse.

At that point use your remote control or keyboard/mouse controls to change channels and perform viewing actions in the full-screen mode. Program information will appear for a few seconds when you change channels and then softly fade away. When you adjust the volume, an on-screen volume meter will appear and then fade away.

Note

At any time you can use the Info button on the remote control (or right-click the mouse) to get show information about the program. This applies to both live shows and recorded shows. Basic program information is overlaid on the show telling the name of the show, the time it started, its duration, and a brief description. There is also a More Information button to see the same screen you would see if you were using the Program Guide.

Such features improve on the standard TV viewing experience. Because you are using a Windows XP computer you can combine the world of TV viewing and computing. For example, you can reduce the program you are watching to a window on the Windows XP desktop to continue watching your program while using Windows applications. An example of this is shown in Figure 9-18.

You can do this in one of two ways:

- Use your mouse to activate the desktop controls and use the "restore down" button to size the screen down to a window. You can then use the mouse to position the Media Center window anywhere on the Windows XP desktop.

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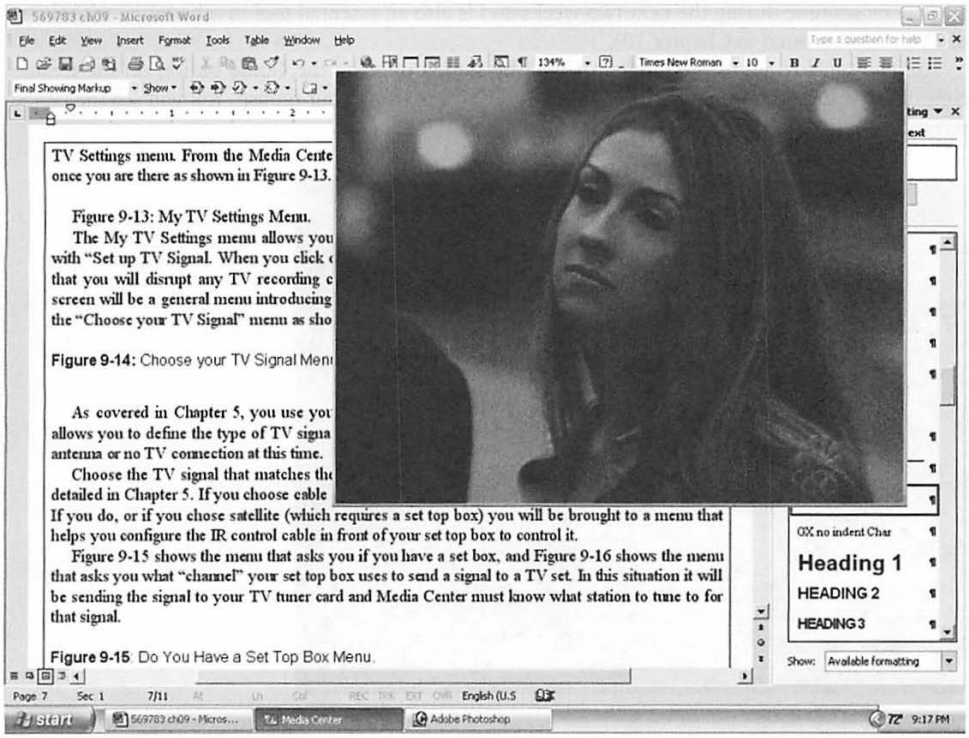


Figure 9-18: Watching a program while using a Windows XP application.

- Click the Media Center button on the remote control to return to the Start Screen, then use the direction keys to move to the restore down button to achieve the same action. The window on the Windows XP desktop will contain the Start Screen. Click the Live TV button on the remote control to fill the windows with your TV program.

You can also display closed captioning or second audio program (SAP) when watching live TV or recorded programs. You do this by going to the Settings menu from My TV and choosing Audio. There you will be able to set closed captioning settings and SAP settings.

Using the Program Guide

Once you have become comfortable using Media Center to watch TV, the next big question you will be asking is "What's on TV?" You are in the right place—Media Center has one of the best on-screen Program Guides anywhere.

The first time you set up My TV, and on a regular basis thereafter, Media Center downloads two weeks of TV programming information for you to use. The Program Guide can be used to see what's

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on now or anytime during the next two weeks and is also an essential tool in scheduling recordings of TV shows (covered in Chapter 10).

You can quickly get to the Program Guide by simply pressing the Guide button on the remote control or clicking the Guide button on the My TV screen using your mouse. You will see the Guide screen as shown in Figure 9-19.

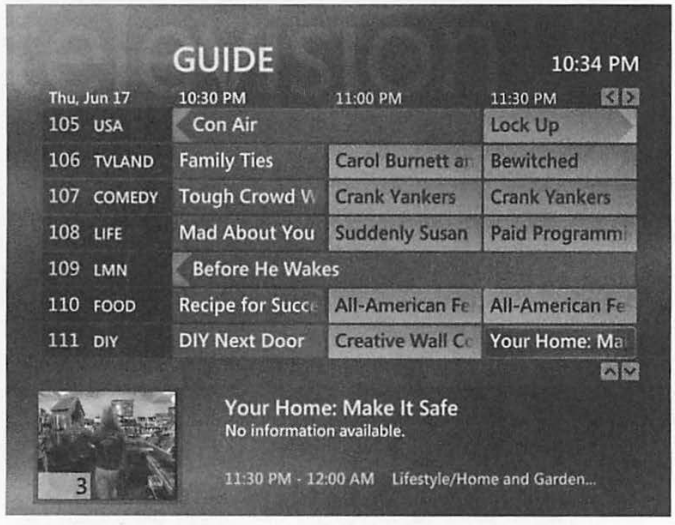


Figure 9-19: The Guide.

Viewing What's On

Let's take a look at the main features of the Program Guide, as shown in Figure 9-20:

- **Inset Window:** Once you have been to My TV or viewed a recorded TV show, when you switch to the Program Guide, the Now Playing window switches to an inset window in the lower-left corner of the screen. The show will continue to play, allowing you to continue to watch your show while using the Program Guide.
- **Channel Guide:** The main portion of the screen is filled with a grid containing your channels shown vertically and show times in half-hour increments displayed horizontally. You can scroll or move your cursor down using the mouse, keyboard direction keys, or the direction keys on the remote control to navigate the channels and two weeks of program information. You can also use the Channel/Page button on the remote control to page through the Program Guide seven selections at a time.

As you move through the Program Guide listings, you can click on any show. If it is a show that is currently on, you are taken to a full-screen view of the live TV show. If you click on a show playing at any other time, you switch to a screen that shows more information about the program, as shown in Figure 9-20.

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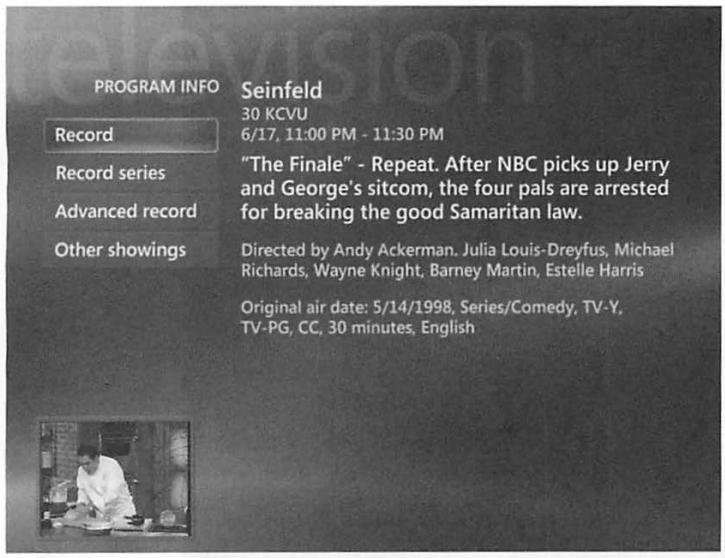


Figure 9-20: Clicking on a future TV event from the Program Guide displays program information and options.

In addition to program information, you can schedule recordings of the show or ongoing recordings of the show whenever it is on. (Recording shows is covered in Chapter 10.) You can also select to find "Other showings" of the program in the next two weeks of Program Guide listings.

Finding Shows

The Program Guide presents a full listing of every TV program you can view in a two-week period. That's a lot of information to sort through when you want to find a specific type of program. To make finding the type of show you are looking for easier, you can filter the Guide to only show a specific type of programming. You can use this feature to only display specific genres and types of programs such as movies, sports, news, specials, or kids' programs. Figure 9-21 shows the Guide displaying only movies.

You reach this function by selecting Search from the My TV menu. From there select Categories and you see a listing of types of shows. This allows you to quickly find the types of shows you want to watch or schedule for recording.

Searching for Programs

Another way to find the program you want is to perform a search of the Program Guide data. You do this by selecting Search from the My TV menu and then selecting either the Title or Keyword menu buttons. Title will search a specific show title. The word you enter may be either the whole name or a part of the name. Figure 9-22 shows what happens when you enter a part of a show title in the search field. In this case, the word "News" was entered and it brought up a long list of programs with the word "News" in their name.

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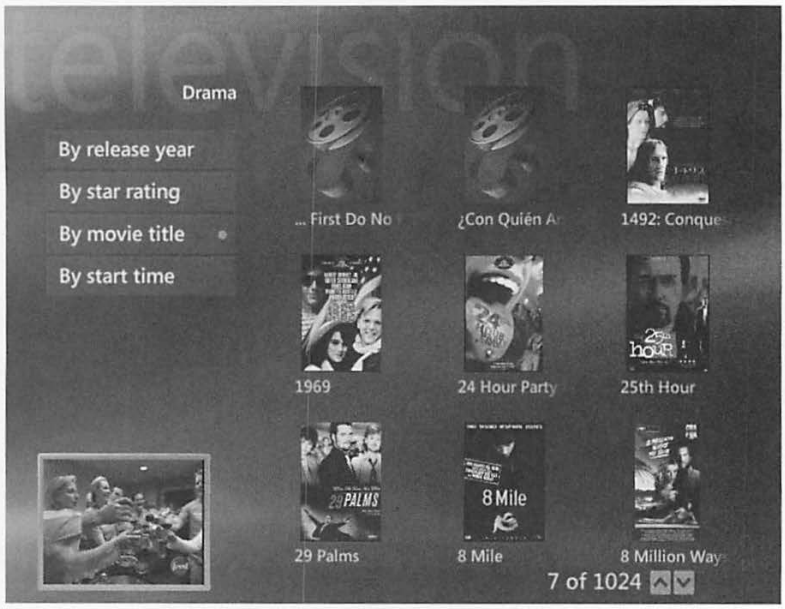


Figure 9-21: The Guide filtered to only display movies.

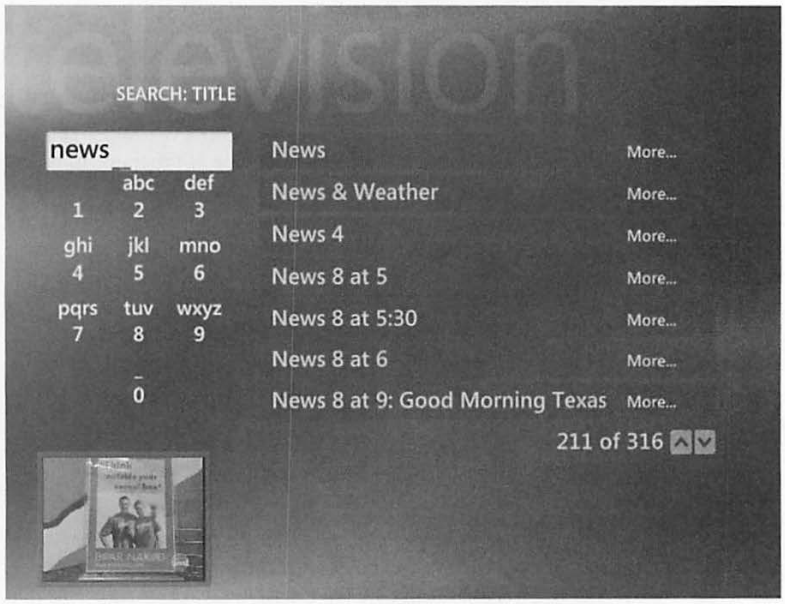


Figure 9-22: Searching for shows with the word "News" in their title.

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Searching by title is specific and will only look for a match in the show name. For a broader search you can use a keyword search that searches all the data about a show including the title and the show description. Figure 9-23 shows the results of a keyword search using the same word, "News."

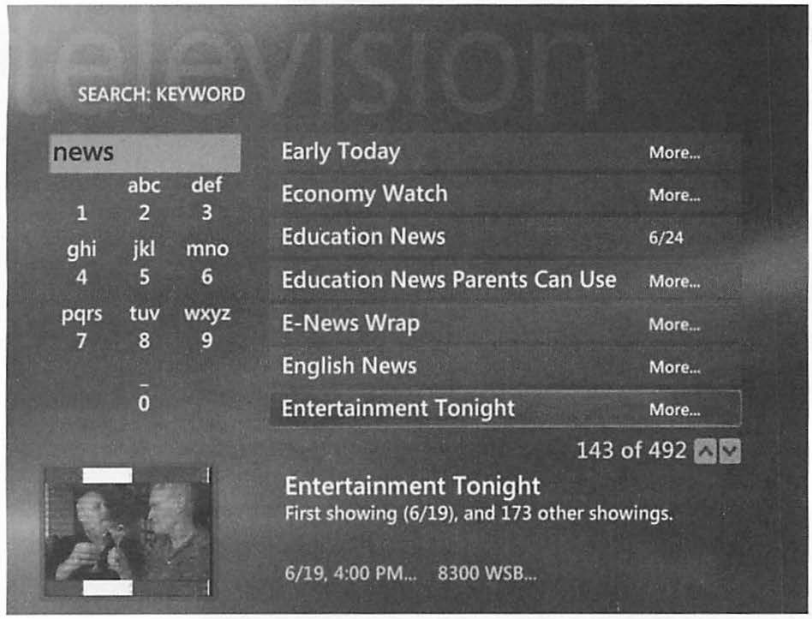


Figure 9-23: Keyword search using the word "News."

As you can see from Figure 9-23, the keyword search brought up all types of shows that contain the word "News" in their description, such as Entertainment Tonight, which presents entertainment news. If you can't remember a show's name, you can try keyword searches with the names of characters, actors, or other words that help you describe what you are looking for.

Figure 9-24 shows the results of a keyword search for "Jennifer." It brought up both actresses and show characters that matched. The search happens very fast so you can enter a number of different keywords to find the show you are looking for.

Customizing the Guide

You can perform a quick customization of the Program Guide by highlighting and then selecting any station. The Program Guide listing changes to display only the shows on that channel. This is a quick way to view all the shows on a favorite network. Figure 9-25 shows the Program Guide listings all of the shows on a single channel.

Another, more subtle way to view upcoming programs in the Program Guide is to simply move to the channel name/number in the Program Guide and, rather than describe an individual episode

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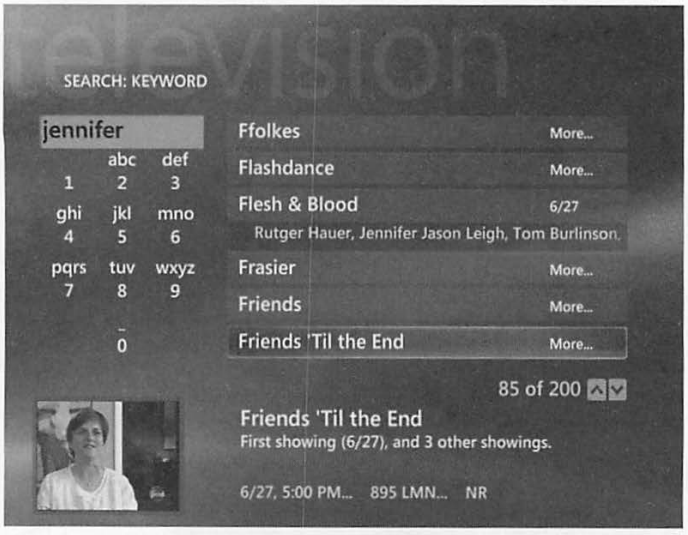


Figure 9-24: Results of a keyword search for an actress or character named "Jennifer."



Figure 9-25: Viewing the Program Guide by single channel listings.

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under the main Program Guide area (when you are highlighting a specific program), it lists the next few shows to be aired on that station, as shown in Figure 9-26.

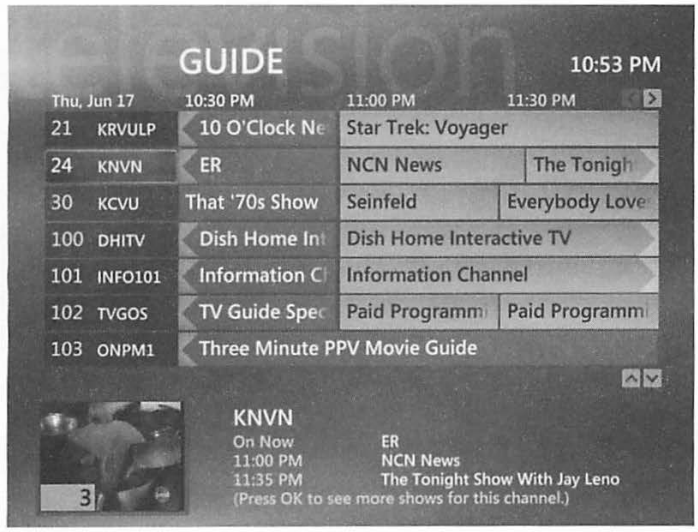


Figure 9-26: Highlight the channel number to see upcoming shows on that channel.

Summary

Once you have gone through the process of setting up your display, selecting your TV provider, and getting Program Guide data, you are ready to watch TV—Media Center style.

You must first obtain channel lineup information from the Internet about the TV provider you use such as cable, satellite, or broadcast TV. That information creates the channels My TV can show and also populates the Program Guide to help you find information about what's on TV in the coming two-week period. Using the Program Guide you can search for TV shows by time, date, and channel, or perform searches by genre, show name, or keywords about the show or its actors and characters.

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Chapter 10

Recording and Playback of TV Programs

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Anyone who has owned a VCR over the past 20 years has had the ability to record TV programs. Interestingly, only a very small percentage of people who owned VCRs ever used them to record TV shows on a regular basis. The cost and hassle of blank videotapes, labeling them, storing them, remembering to put a blank tape in, and figuring out how to schedule a recording all made the process numbingly complex. Maybe it was just that once you have seen a show or a movie you rarely want to watch it again and again.

In the late 1990s DVDs began to replace VCRs—and for good reasons. As a playback device, VCRs are low-quality compared to DVDs. With a DVD you could jump to different chapters in an instant. You didn't have to rewind them. If you only wanted to play a movie, the DVD format was the way to go.

Another device appeared in the late 1990s—the Digital Video Recorder (DVR). DVRs from TiVo and ReplayTV arrived with the promise that they would change TV viewing forever. Essentially hard drives connected to a TV turner card with an operating system dedicated to scheduling, recording, and playing back TV programs, they offered the recording ability of a VCR with the digital features of DVD.

DVRs allow you to view a sophisticated Program Guide that can schedule a show for recording, or even record a favorite show or type of show whenever it's on. Once recorded, you can play the show back and jump around the program just like a DVD. Even better, since the hard drive is always recording what you are watching, you can pause a program and then return and pick up where you left off. All of those features are a perfect complement to TV viewing.

The concept of *time shifting* TV viewing is possible with a DVR. Even when watching a live TV show, it's possible to time-shift when needed. What is time shifting? Well, you can replay a scene, for example, just like with a DVD. You can decide in the middle of the show that you would like to record it for later viewing. You can even wait about 15 minutes into a show before viewing it and zip past segments or commercials you don't want to view.

Note

DVR stands for *Digital Video Recorder* and is any device that can store video on digital media such as a hard drive. PVR, which stands for *Personal Video Recorder*, is often used to describe the exact same device.

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Although DVR devices are gaining momentum (Dish and DirecTV are now both offering DVR features to new subscribers), they are still expensive because they require a monthly subscription fee to use the Guide, they have a limit to how many hours can be recorded, and their hard drives cannot easily be upgraded to larger sizes.

Recording TV Shows

Media Center PCs are fantastic DVRs and then some. Right out of the box, a Media Center PC has virtually all of the features and benefits of dedicated DVRs but with some significant advantages:

- There's no monthly subscription fee for the Program Guide.
- You can add as much storage as desired to record TV programs by adding hard drives.
- With a DVD burner you can transfer recorded TV shows to DVDs.
- A Media Center PC with extenders can power multiple users and TVs.
- You can use a computer monitor to view your recorded TV shows, effectively turning your PC monitor into a bonus TV.

All of these features are included in a home entertainment device that also includes DVD playback, playback of music and digital photos, and also comes with a top-of-the-line PC at an affordable price.

Once you've set up your Media Center PC to play TV as covered in Chapter 9, you are ready to begin time shifting and recording TV shows. Let's get started.

Recorder Settings

Media Center can record TV at different "quality" settings. Because TV programs are files on your hard drive, you may wish to sacrifice a bit of visual quality to fit more hours of TV shows on your hard drive. Different levels of compression are used when recording a show. The more compression used, the lower the quality of the video. Less compression results in a high-quality video but takes up more space on your hard drive.

Media Center uses four levels of "quality," or compression. Table 10-1 gives an approximate estimate of how many gigabytes per hour of recording you can get at each quality setting.

Table 10-1 Hours of Recording at Different Quality Settings

Recording Quality	*Approximate File Size*
Best	3GB per hour
Better	2.5GB per hour
Good	2GB per hour
Fair	1GB per hour

As you can see, when using the "best" quality setting, if you have 60GB of hard drive available for recorded TV shows you would be able to store about 20 hours of programs. At the "fair" quality setting you could get about 60 hours of programming.

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To understand which setting is right for you, think about the following issues:

- **Are you only recording the shows for one-time playback?** If so, you can record at the best quality since you will be erasing the show after viewing.
- **Will you be storing the shows on your hard drive long-term?** You'll want to seriously consider using a lower quality setting because the gigabytes add up quickly on any hard drive with high-quality recordings.
- **Are you planning to store the shows on a DVD?** Just like a hard drive, DVDs can hold more hours of programming when you record the show at a lower quality setting. At the "best" setting you can only fit about a one-hour show on a DVD. At the "fair" quality setting you can fit about four hours on a DVD.

Beyond storage and DVD burning considerations you will ultimately need to record shows at the different quality settings and watch them on your TV or computer monitor. If the fair quality setting is acceptable, then use it and gain as much storage as possible. If you find the higher quality settings are more to your liking and you have plenty of storage space, use those—but remember you can't fit many hours on a DVD at the best setting. For a two-hour movie, use the "good" setting to fit it onto a single DVD.

The preceding concepts are ones that you will understand better once you record shows at different quality settings, so the first step is to learn how to change the settings. From the Media Center Start Screen, choose Settings, TV, and then Recorder.

Once you are at the Recorder Setting screen, as shown in Figure 10-1, there are two menus that you will need to work with: Recorder Storage and Recording Defaults. These menus enable you to set the recording quality and also set which hard drive shows are stored on, how much of that hard drive

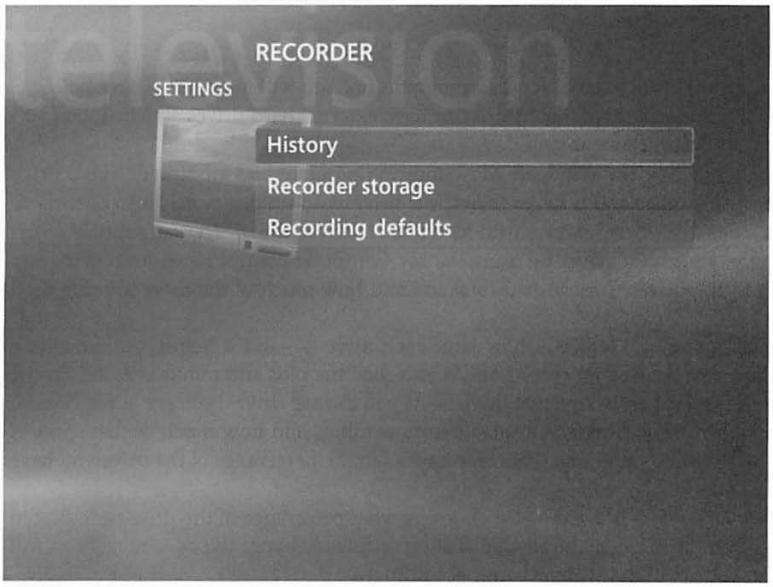


Figure 10-1: The Recorder main menu.

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should be dedicated to recording shows, and how long the shows should be kept. You can also set limits on how many hours of shows can be recorded each day and whether a recording should start and stop a bit before and after a show airs.

First, go to the Recorder Storage screen as shown in Figure 10-2. This menu controls where the files are stored and what percentage of the drive can be used for recording.

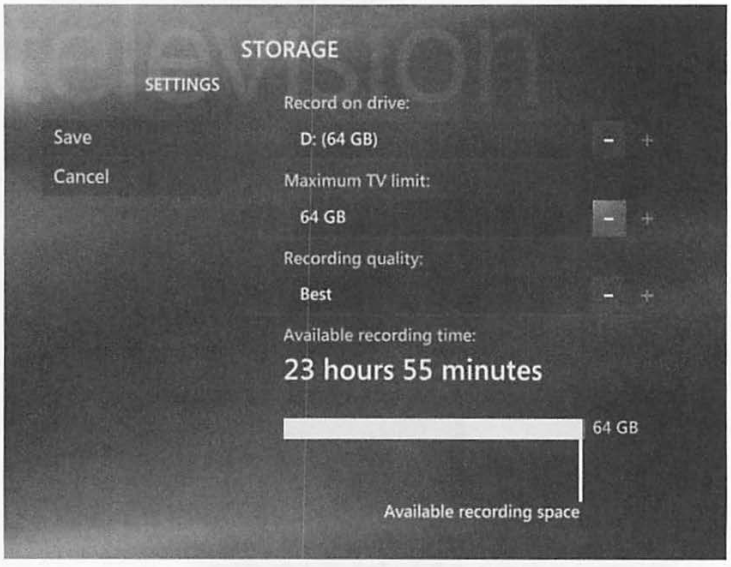


Figure 10-2: The Recorder Storage menu.

The first item to set is the drive to store recorded programs on. You will most likely have both a C and a D drive. If you have added a second hard drive or have external hard drives attached, you will have drive letters associated with those as well.

Your C drive is generally where the Windows XP system and program files are stored. The D drive is usually allocated for data storage and is larger than the C drive. Add-on drives may also offer more room than the C drive since most C drives are partitioned to be relatively small. You can see how much room you have on any of your hard drives by using the My Computer control panel from Windows XP. Right-click on any of the drives to view their total size and how much of the drive is being used by data or programs.

The Recorder Storage menu also tells you how large each drive is—and it helps you know how much space on that drive can be used for recording. As you click the plus and minus symbols on the Record on Drive item, it displays how large that drive is. As you change drives, you see at the bottom of the screen a listing of how much space is available for recordings and how much of that space is currently being used by recorded programs. This only applies to the percentage of the drive you have dedicated to recording shows.

Under the Record on Drive item is a setting for choosing what percentage of the drive is dedicated to recording TV shows from My TV. Use the Disk Allocation setting to change the percentage. You will see the estimates at the bottom of the screen change accordingly.

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Finally, there is a setting for Recording Quality. Choosing different recording qualities will also reflect how many hours of programs you can store (based on the size of the drive and percentage allocated to recording in the first two settings). You can see the estimates at the bottom of the screen.

The two estimates at the bottom of the screen show the maximum recording time based on the settings you've chosen. This is the total amount of time that can be stored at those settings. The other estimate is the unused recorder time that subtracts the space used by currently recorded shows and shows how much actual time is available for recordings. Because you will be adding and deleting shows, this number is always changing.

The most important setting is which drive to use. Use one where you have the most free space and allocate a reasonable amount of that drive to recording. Starting with 50 percent is safe and you can check back occasionally and examine how your recording habits are working with the space you have allocated.

In the same manner, try different recording quality settings and watch the recorded shows to determine if the lower quality settings are acceptable. They offer you the greatest amount of storage on your hard drive and on DVDs you burn.

After making settings in the Storage menu, click Save and then go to the Recording Defaults menu as shown in Figure 10-3.

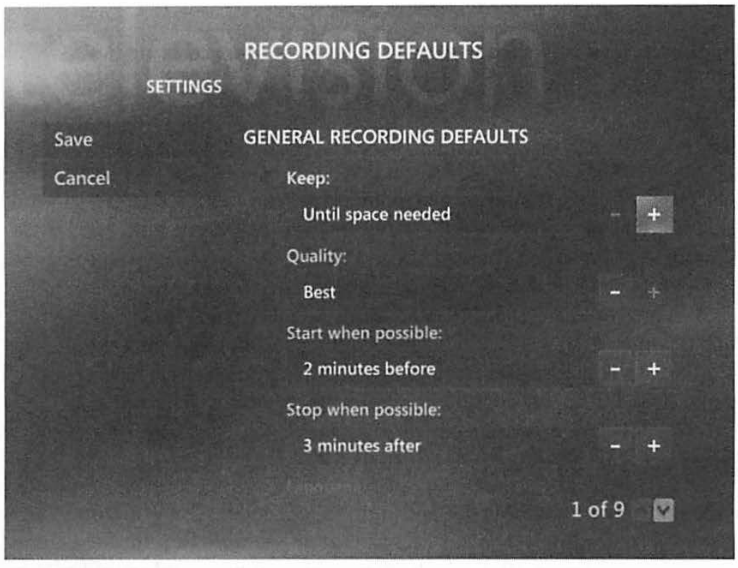


Figure 10-3: The Recording Defaults menu.

The Recorder Defaults menu has a number of settings you will want to work with. These are the settings used by the recorder as a default for recordings—however, when you record a program you can override them. Let's go through them one-by-one:

- **Keep:** This setting specifies how long a recording should be kept. The choices are
  - Until space is needed

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- For one week
- Until I watch
- Until I delete

- **Quality:** Sets the quality of the recording to best, better, good, or fair.
- **Start When Possible:** Sets when the recording should start: On time, 1, 2, 3, or 4 minutes before.
- **End When Possible:** Sets when the recording should end: On time, 1, 2, 3, or 4 minutes after.
- **Language:** Sets the recording language: English or any language.
- **Series Only Recording Defaults:**
  - **Show Type:** Records based on whether the show is live, first run, or either a first run or a rerun.
  - **Record On:** Only records the show if it is on one channel only, one channel anytime, or any channel anytime.
  - **Daily Recording Limit:** Limits the recording of a series to once per day or no limit.
  - **Keep Up To:** Sets how many of the shows in a series to keep: 1, 2, 3, 4, 5, 6, 7, 10 or as many recordings as possible.

Since you can schedule the recording of a TV series, the preceding settings are very important. A series such as *Friends*, for example, can run on several channels several times a day. If you set a recording to find and record all episodes of *Friends*, these settings will help keep your hard drive from being consumed with more episodes than you had hoped for. The "keep as many recordings as possible" option does make it possible to record every episode if you have room for them.

After getting familiar with the recording settings, you are ready to make some initial settings (or use the default settings Media Center starts with) and begin recording TV shows. A final suggestion: after a week of recordings, go back to the Recorder Settings menu and see much space has been used for your recordings and make any adjustments you think reflect your recording characteristics.

Manual Recording of TV Shows

The quickest way to get recording is to go to My TV and tune to a channel. Using the on-screen desktop controls or your remote control, press the red Record button one time to record the show. This brings you to the screen shown in Figure 10-4, which allows you to begin recording and specify if you want to record the one show or the entire series.

What if you came in at the middle of the show? If you had it playing as live TV since the beginning of the show, using one-touch record automatically records the show from the beginning. The recorder will use the 30 minutes of buffer it keeps at all times for pausing and rewinding live TV, so if you start recording a show past the 30-minute buffer it records the last 30 minutes it has stored up until the time you selected to begin recording. If you want to stop the recording, simply press the Stop button on the remote or desktop controls. There will be an on-screen prompt asking if you are sure you want to stop. In addition, at any time during the recording you can pause, rewind, or return to live TV.

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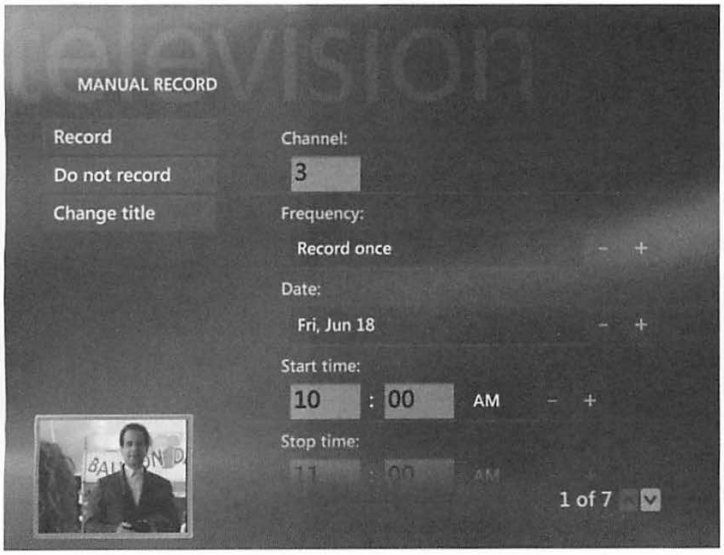


Figure 10-4: Manually recording a live TV show.

SCHEDULING RECORDINGS FROM THE GUIDE

Manual recording is great for shows you are watching live, but most of your recording activity will be scheduled recordings. Chapter 9 introduced you to using the Program Guide. The Guide is the primary method for scheduling recordings.

Using any or all of the methods to find shows using the Guide, once you find a program that you want to record, as shown in Figure 10-5, click on it. If the show is at any time in the future, once you click on it you will see the screen shown in Figure 10-6, which is where you schedule the recording.

Information about the program you have selected is displayed on the screen. This will help you understand if the show is new or a rerun and to make sure it is a show you want to record. In addition to the show information there are three buttons for recording: Record, Record Series, and Advanced Record.

Each of the buttons allows a different type of recording. Here are the differences:

- **Record:** Schedules a one-time recording of the show you selected.
- **Record Series:** This schedules the recording of the series. It records all the shows the Guide can find for this series. Remember setting the Series Only Recording Defaults earlier in the chapter? Those rules will apply to how the series is recorded. If you want to schedule a series recording or even a one-time recording with different settings, use the next option.
- **Advanced Record:** If you want to override the defaults for one-time or series recordings, use the Advanced Record option. You will be able to set all the options for recording for the one show or show series.
- **Other Showings:** Displays a list of all other airings of the show, regardless of time or channel.

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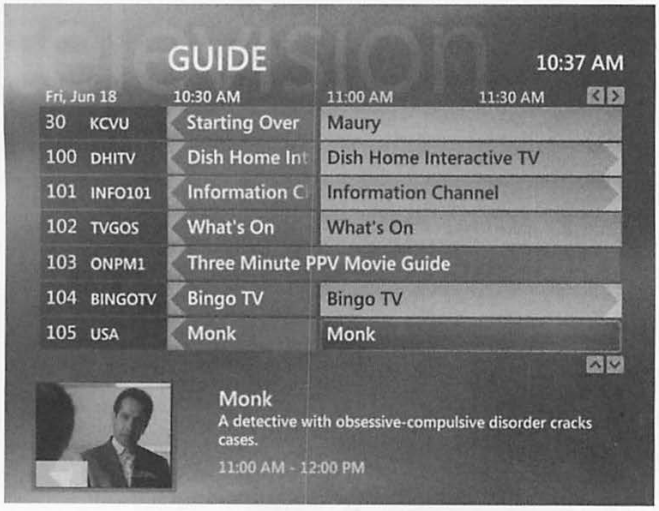


Figure 10-5: Find a show you want to record in the Program Guide.

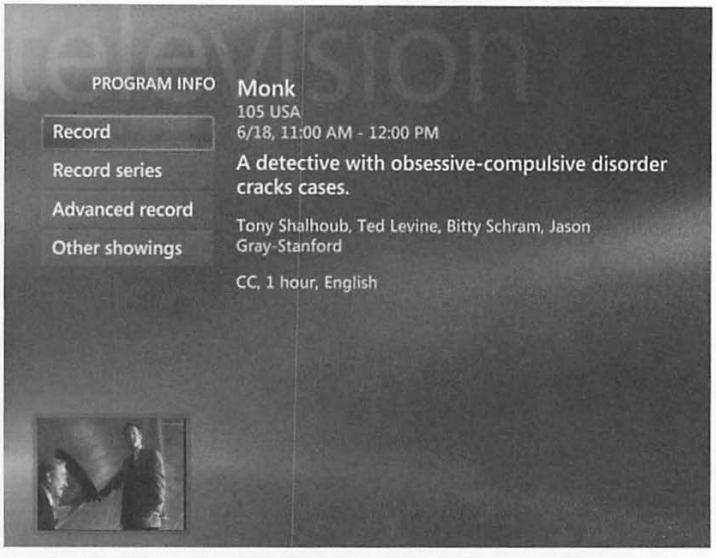


Figure 10-6: Click on the show from the Program Guide to schedule a recording.

Once you have scheduled a recording using the Guide, a round red record symbol appears in the grid for the shows to be recorded. Figure 10-7 shows a grid with both single shows and show series scheduled recordings. A single show has one round red record symbol. A series has a series of round red symbols fading off to the right.

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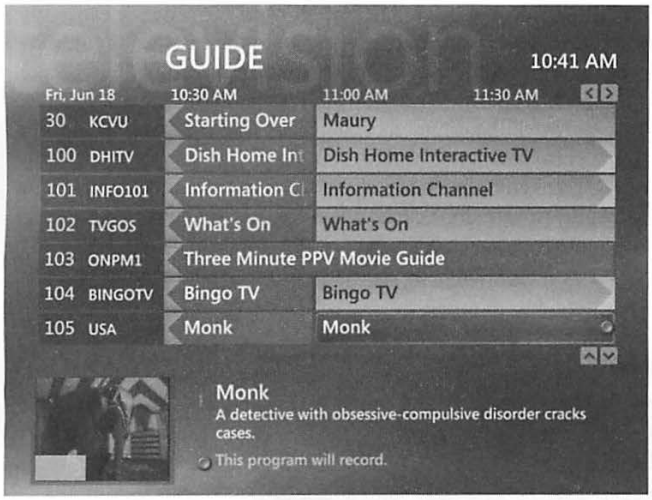


Figure 10-7: Program Guide with single show and show series recordings scheduled.

CANCELING RECORDINGS FROM THE GUIDE

To cancel the scheduled one-time recording of a show, go to the instance of the show in the Program Guide and click on it. The show information screen appears as shown in Figure 10-8. Click the Do Not Record button. The recording will be cancelled and you will be returned to the Guide, where you will see the record symbol has been removed from the show.

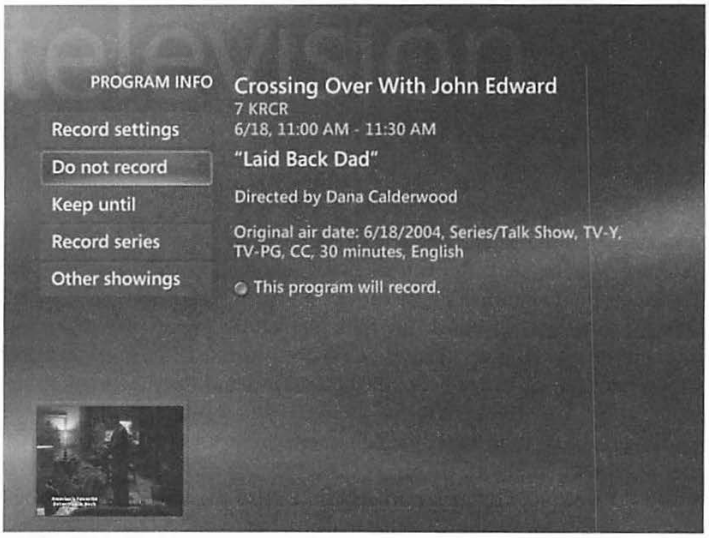


Figure 10-8: The Do Not Record button cancels a scheduled one-time recording.

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If you have scheduled a series recording, you can delete just one show in the series or cancel the recording of the entire series. To cancel just one episode in the series, go to the instance of the show in the Guide, click on it, and follow the same procedure as canceling a one-time recording. This cancels the one show and leaves the series recording in place. When you are retuned to the Program Guide, the "series" recording symbol for that show will be dimmed. This means that the show is part of a scheduled series recording but that that episode will not be recorded.

To cancel the recording of the series, go to any occurrence of the series in the Guide and click on it. When you arrive at the show information screen, don't click the Do Not Record button, but instead click the Series Info button. From the Series Info screen you can choose to cancel the series recording, as shown in Figure 10-9. When you return to the Guide, the series recording symbols will be removed for all instances of the show.

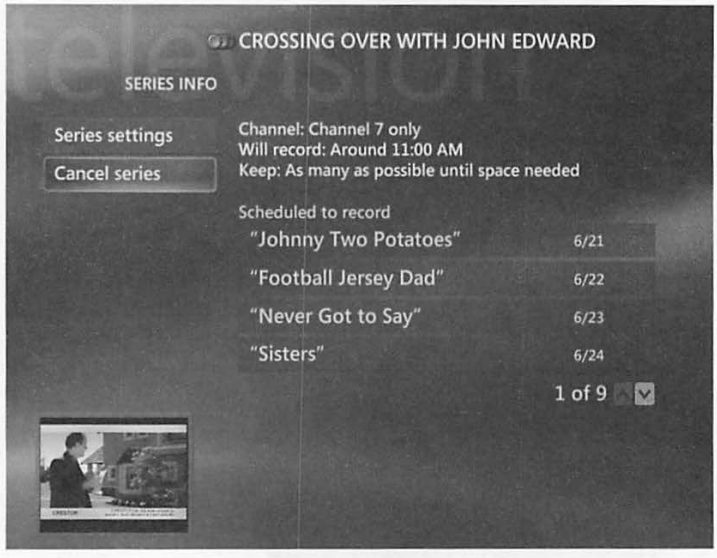


Figure 10-9: Click Cancel Series to stop series recording.

One of the nicest ways to manage recordings and show information is to press the Info button on the remote control when a show is highlighted. You will see a shortcut menu that enables you to schedule and cancel recordings and get more information, as shown in Figure 10-10. You can also get to Info by using a mouse and clicking on the right mouse key for a highlighted event.

It is a lot of work to go through the Guide to find shows you have scheduled to record. With a large grid of channels and two weeks of shows, it's really not the best way to find the shows you have scheduled for recordings.

Another way to cancel recordings is to go to the Recorded TV menu from My TV. This button is found on the My TV main menu, as shown in Figure 10-11.

The Recorded TV menu, shown in Figure 10-12, displays a list of shows that you have recorded. You can play the shows or delete them from this menu (more on that in a bit), but to find all the shows you have scheduled to record you click the Scheduled button to arrive at the screen shown in Figure 10-13.

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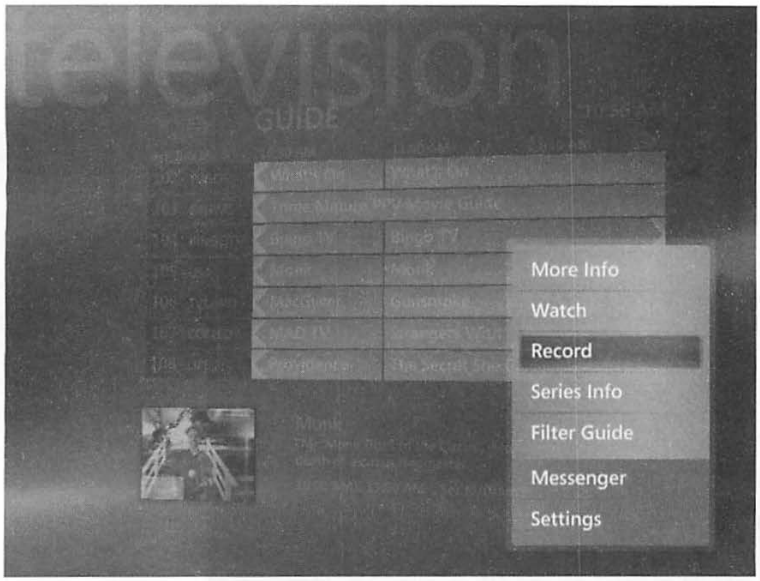


Figure 10-10: Click Info to reach additional options.

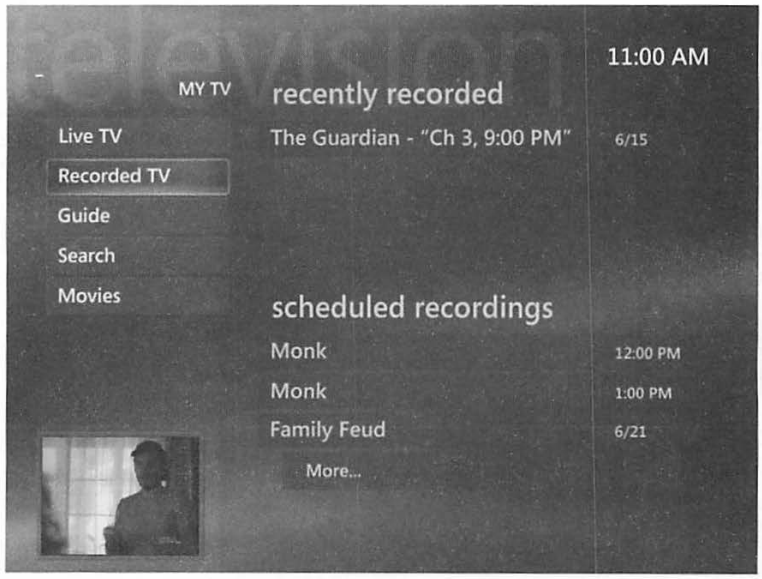


Figure 10-11: A list of recorded shows.

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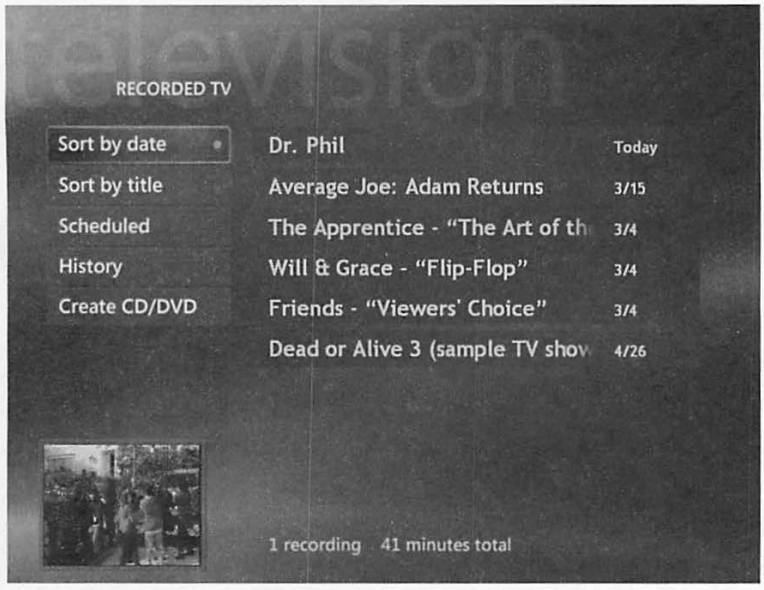


Figure 10-12: The Recorded TV menu.

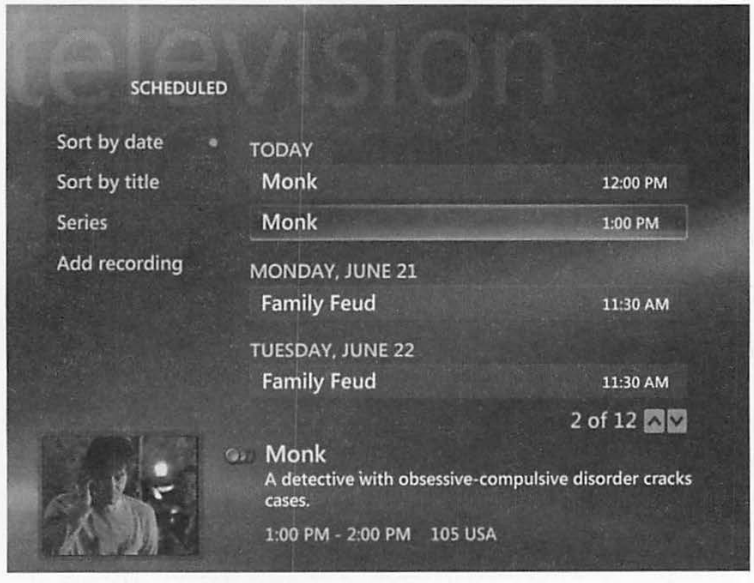


Figure 10-13: Shows scheduled for recording.

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From the scheduled recordings you can click on any show to cancel the recording. Once you click on the show you are presented with the same information as if you clicked on it from the grid. Use the same procedures for canceling the show or series as detailed earlier in the section.

Using the Guide is a great way to record—and cancel recording—of shows. The next section discusses other methods to record shows that go past the linear, time-based metaphor of the Guide.

Advanced Recording Methods

Chapter 9 looked at how to use the Program Guide to find shows by genre and categories such as movies or comedies. You can do more than just find those shows using the Guide; you can schedule the recording of entire categories of shows.

As shown in Figure 10-11, go to the Recorded TV menu from the main My TV menu. Once there, click Add Recording. The menu shown in Figure 10-14 appears.

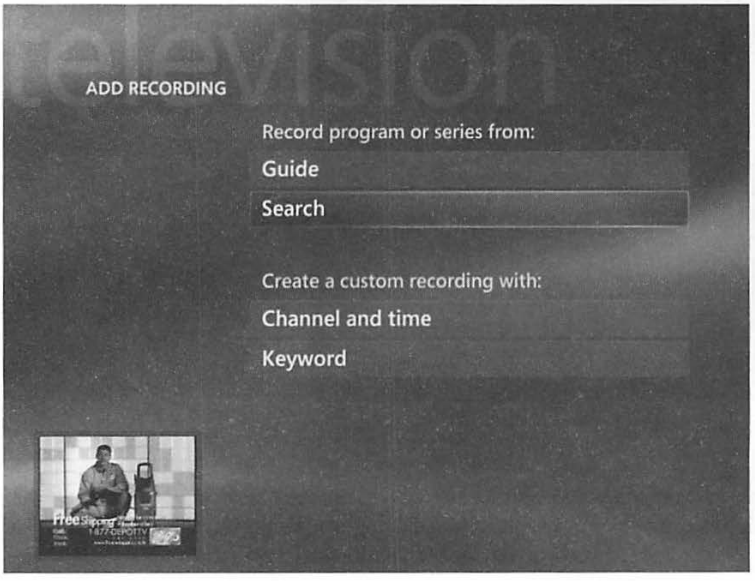


Figure 10-14: The Add Recording menu.

A number of choices are available for finding or scheduling the shows you may want to record. They include:

- Record program or series from Guide.
- Record program or series from Search, which includes searching by category, title, or keyword.
- Create a custom recording by Channel and Time.

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- Create a custom recording by Keyword, which includes finding shows by actor name, director name, movie title, show title, or generic keyword. Using keywords by actor, director, movie, or show title helps find the exact shows you are looking for as opposed to a very broad keyword search.

The first two methods are really the same as if you use the Guide to schedule a recording or use the search function in the Guide to find shows. The second two options are not available from the Guide and add strong features to schedule recordings.

Figure 10-15 shows the screen when you select recording by channel and time. This feature covers recording spans of TV shows and also shows that rotate within specific time slots—an example being PBS shows that follow a theme at a certain time each week but have different show titles.

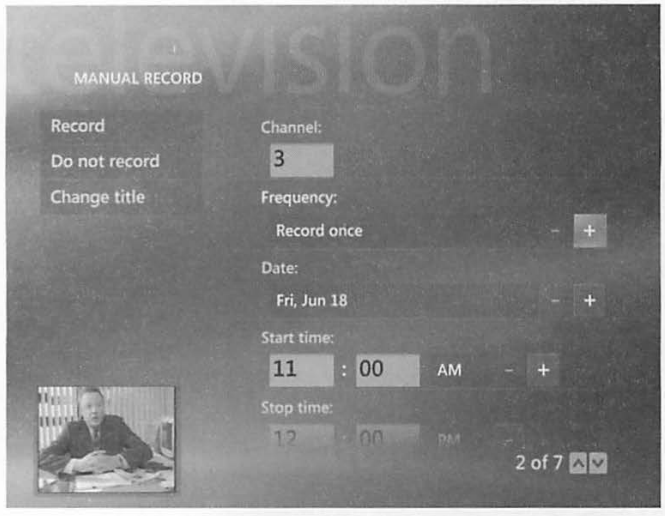


Figure 10-15: Record by channel and time.

You enter the channel and the times you want to start and stop the recording. You also enter the date of the first (or only) recording. You can schedule recurring recordings by using the options to record every day, every weekday, every weekend day, or every individual day of the week such as every Tuesday.

Once you have entered in all of the information you need to schedule your recording, you can also give the recording a name, such as "PBS Nature Series."

People who grew up using their VCRs to schedule recordings using the channel and date method will find this method familiar, but beyond the comfort zone of the VCR days, this feature offers the ability to control schedules beyond what the Guide can provide.

The most interesting recording option is to create a custom recording by keyword. From the Add Recording menu, select Create a Custom Recording by Keyword and you arrive at the menu shown in Figure 10-16.

The process starts by deciding what type of keyword recording you want to create. The broadest option is to use a generic keyword such as "Friends." This will find all the shows that have the word "friends" in their title or in any of the data about the show including descriptions, cast, and

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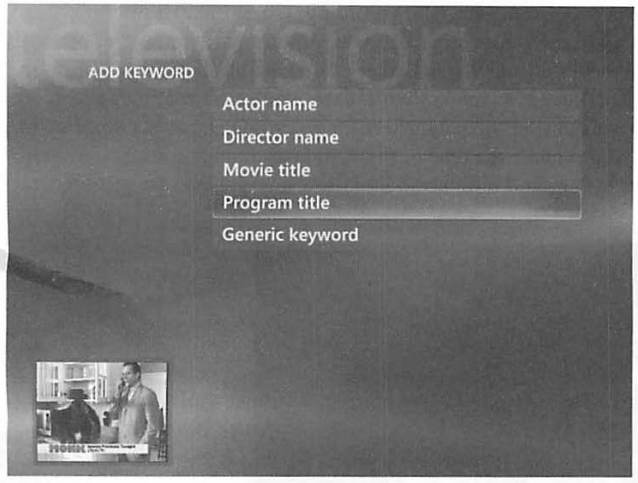


Figure 10-16: The Add Keyword menu.

characters. This may result in the recording of too many shows or shows that you did not want, but in some cases it may be the only way to find the shows you need.

To narrow the keyword recording you can search by keyword within specific "fields" of the show information, such as actors' names, directors' names, show titles, or movie titles. This refines the search to those fields of data.

You first define the keyword you want to use within any of the categories as shown in Figure 10-17, where a keyword search for "Jennifer" has been entered into the actor keyword recording menu. Media Center searched all the actor fields in the database of all shows and presented a list of all actors with "Jennifer" in their name.

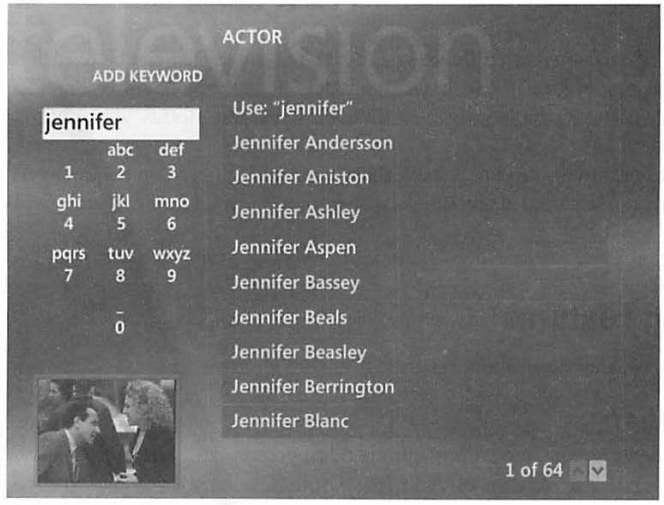


Figure 10-17: Actor keyword search on the name "Jennifer."

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At this point you select which name you want to use for recording. Using the first option of "use Jennifer" records all the shows with all of the actors listed below it. Assuming that may not be what you want, you can select any of the actors listed and Media Center will record all shows they appear in.

Figure 10-18 shows using "Jennifer Garner" as the keyword. Once you select that name, you are brought to a recording menu where you can set the parameters for recording shows she appears in. One of the options is to narrow the recording by the type of show, such as drama series. You can also set recording of first-run shows, or first runs and reruns and limit how many shows are recorded.



Figure 10-18: Refining the record by keyword criteria.

After selecting Record you are sent to a menu that shows you the type of shows that will be recorded based upon your keyword parameters. Figure 10-19 shows that "Alias" is the type of show that will be recorded when using Jennifer Garner as the keyword. At this point you can modify your criteria or choose OK to schedule the recordings.

When you return to the Guide you will discover that shows have been added based on the keyword recording method. You can modify the keyword at any time—who knows, maybe Jennifer Garner will decide to be sultry in a comedy.

Additional Recording Features

The following sections discuss a few final notes about recording.

RECORDING SCHEDULE UPDATES

Media Center regularly updates the Program Guide. Programs are often preempted, schedules change, and shows are added and cancelled. In the old days of VCRs that would have meant you had to keep

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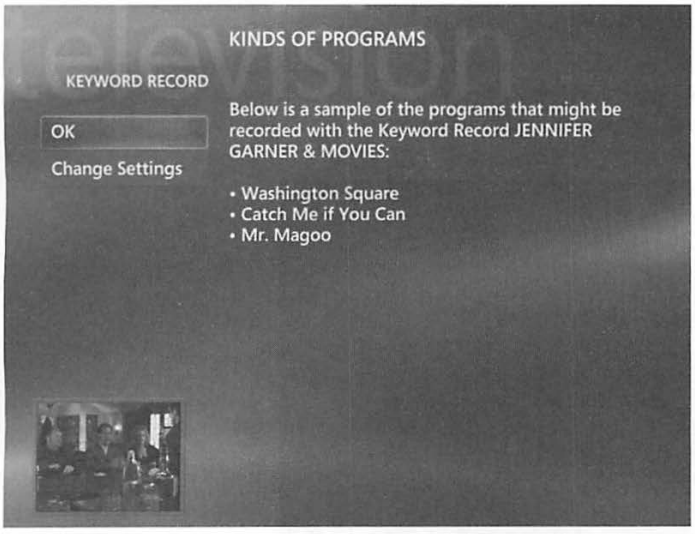


Figure 10-19: Media Center indicates what types of shows it will record using the keyword.

on top of such changes. Media Center uses recording schedule updates—it keeps track of the shows you have scheduled to record and makes changes if the show schedules change. This is a great feature and works with about every instance except when you schedule recordings by a specific time and channel.

RECORDING CONFLICT MANAGEMENT

When you schedule recordings by keywords or by show and there is a change in the show schedule after you set the recording, there will be occasions where shows will run at the same time. This creates a recording schedule conflict. Media Center will create an alert to have you decide which show to record. When you set recording parameters there are also settings for giving the show priority—essentially you can say that in a conflict either "record the other show" or "this one is a must."

WAKING YOUR PC TO RECORD

You may not want to leave your PC on all the time, but it must at least be in the "sleep" mode for recording. Media Center will automatically "wake" your PC in time to record a scheduled show.

Playing and Managing Recorded Shows

Now that you have mastered scheduling shows to record, you can kick back and watch a few of them. Although playback of recorded shows is extremely easy, you will want to learn how to manage those recordings. They can fill up your hard drive and, when you record lots of shows, you may have enough to need a special Program Guide just for your recorded shows. Media Center has all that figured out for you.

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Playing a Recorded Show

Media Center makes it easy for you to find the shows you have recorded. The My TV main menu lists recently recorded shows right under the Now Playing window. To watch one of the shows on the list just click on it. You will be sent to a program information screen, as shown in Figure 10-20.

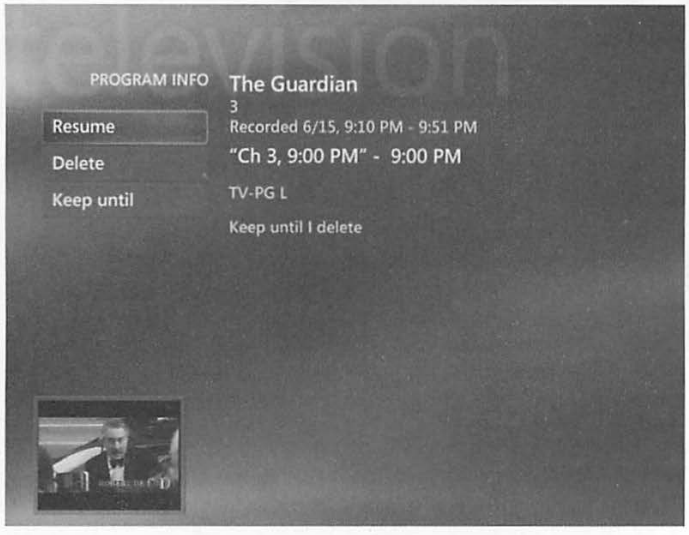


Figure 10-20: Information about a recorded show is presented when you click on it.

At this point you can choose to play the show and it will start playing in full-screen mode. If you started playing the event and stopped it at any point, when you return to this screen you will see a Resume button that starts the program at the "bookmark" created when you left the previous viewing.

If you want you can delete the show. Whether you have watched the show or not, this is the place where you delete recorded shows. If you only recorded one show, it will erase that show. If the show was part of a series recording, it will just erase the one show you have selected. You can also press the Info button on the remote control or right-click on a show using a mouse to delete the recording.

The next option on the menu is the Keep until item. From this menu you can choose to keep the show without change, keep until space is needed, keep until a specific date, keep until you view it, or keep the show until you manually delete it. These options allow a great deal of control over how long to keep a recording in addition to the record settings you established when first setting up recording preferences.

When you select Play (or resume play), you view the show in the full-screen mode. If you want you can find out more information about the show at any time you are viewing it by pressing the Info button on your remote control or right-clicking the mouse over the show. Figure 10-21 shows program information presented over the show playing in the full-screen mode.

On-screen cues are used when you fast forward or rewind while viewing a show. Figure 10-22 shows how Media Center visually shows you where you are at when fast-forwarding or rewinding a show.

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Figure 10-21: Information and show options are presented when you press the Info button on the remote control.



Figure 10-22: Knowing where you are when fast-forwarding or rewinding.

Once you have completed viewing a recorded show, Media Center presents you with the screen shown in Figure 10-23. You are asked if you want to restart, keep, or delete the show. This menu is only shown at the end of the show, not when you press Stop on your remote control or from the desktop controls.

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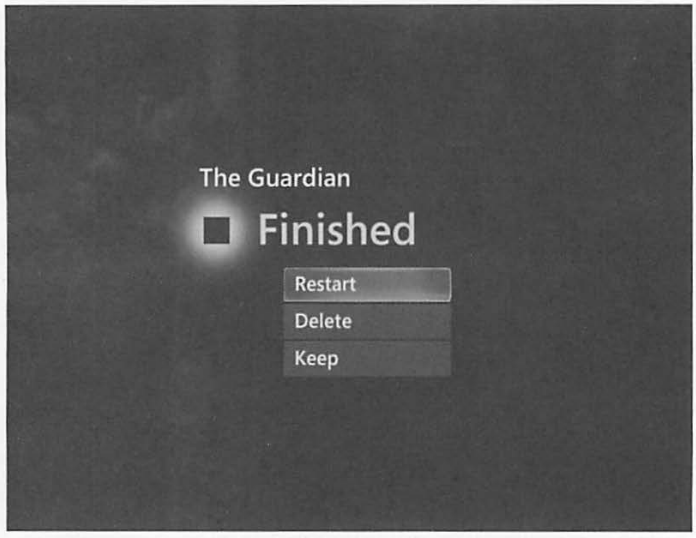


Figure 10-23: Media Center asks you what to do with a show after you have watched it.

Since the My TV main menu only lists recently recorded shows, to view a full list of all of the shows you have recorded, choose Recorded TV from the menu items. You will go to the Recorded TV menu, where you will find a full list of all shows that have been recorded and also a History list option to show events that you recorded, cancelled, or failed to record as shown in Figure 10-24.

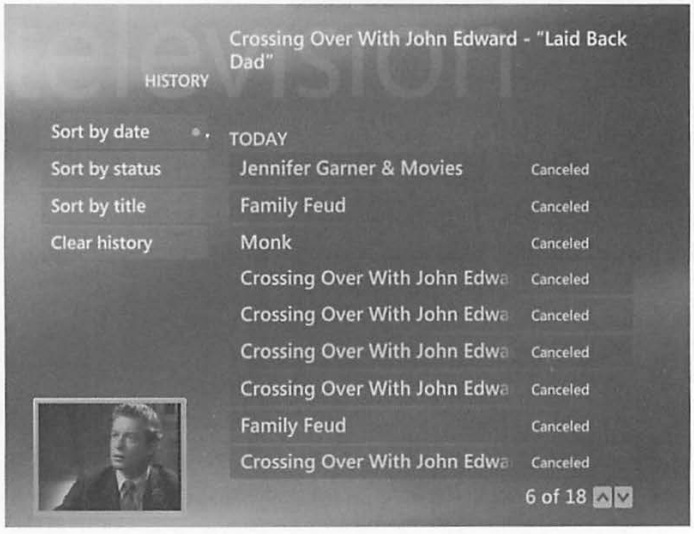


Figure 10-24: History of recordings menu.

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Managing Recorded Shows

Once you have a number of shows recorded, you will appreciate the tools Media Center offers to find and manage recorded shows. It may seem strange that "finding" a show is an issue, but with series recording and the overall ease of recording shows you may end up with a lot of shows on your hard drive and it may become hard to tell which episode of *Friends* is which. (Okay, bad example as all episodes of *Friends* are the same episode really. . . .)

Just as the Program Guide allows you to search for shows by keywords, actors, or show titles, because recorded shows retain all of that guide information along with the recording you can search for recorded shows using the same methods as with the Guide.

The first place to find and manage recorded shows is the Recorded Shows menu. This menu contains tools to make present the list of shows in a number of ways and to help you find the right show. You can sort the shows in the list by the date they were recorded (great for that show you recorded last Thursday and you can't remember the name of), sort by name, or sort by the category.

You can also add a recording using the same basic scheduling routines presented earlier in this chapter.

The final menu item is to view the "Scheduled" recordings. All of the shows scheduled to be recorded are listed in this menu, but you can also find out about shows you have recorded in the past as well by using the History menu.

With all of the tools for managing recorded shows, you will quickly learn to find the show you are looking for, add new shows, delete shows, and view them when you please.

Summary

Media Center excels at functioning as a digital video recorder. Using the hard drives in your computer or attached to it, you can store a virtually unlimited number of recorded TV shows. If you have a DVD burner, it is also possible to transfer shows from your hard drive to a DVD.

After going through an initial setup process to establish recording preferences and what quality you want to record TV shows with, you can record TV shows while watching them using one-touch recording or you can use the Program Guide to schedule recordings of individual shows and show series. Recordings can be made by using keywords to record all shows that have that keyword in their description, and shows can also be recorded by time, date, and channel.

Once shows are recorded, they are easily viewed full-screen, on the My TV menu, or on the Windows desktop in a window. Recorded shows can be deleted or kept as long as desired. You finding recorded shows from a menu or from a search of the data about the show from the Program Guide.

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Chapter 11

Playing and Burning DVDs



Playing DVDs may not seem like a big deal—if you've had a DVD drive in past computers you've "been there, done that." Also, to be fair, movies don't look that great on a computer monitor and it is nicer watching a DVD on a player in the living room or bedroom. DVD burners have been around long enough where recording a DVD is old-school stuff, too. You can't copy DVDs you rent so you are left to using your DVD burner to copy your home movies or make slideshows of your digital photos.

Media Center will breathe some excitement back into the DVD part of your life. As your primary entertainment center, it will play DVDs that look the way they should—not the way they used to on older computers. Video de-interlacing and video scaling make DVDs look great on a computer monitor or a TV. It has all of the features and controls found on any dedicated DVD player and uses the same remote control you will be using for music and TV viewing.

One of things you will like best is that you can burn TV shows recorded in My TV to DVDs. Beyond the ability to build your own DVD library of the greatest shows ever to be played on TV, moving TV recordings to DVD allows you to free up hard drive space for recording even more the of the greatest shows ever to be played on TV!

This chapter takes a look at playing DVDs with your Media Center PC and then shows you how to burn your recorded TV programs using your DVD burner.

Playing DVDs

Your Media Center PC should be set up so that when you place a DVD in your drive, Media Center automatically launches (if you are in Windows XP) and the DVD begins to play. Some Media Center PCs may not be configured for AutoPlay, so the first time you insert a disc you will be asked which program you want to use to play DVDs. Choose Media Center and check the box indicating that you wish to always use Media Center for DVD playing.

The DVD plays full-screen and acts exactly the same way it does when you use a standard DVD player—it shows copyright warnings, perhaps force-plays a few trailers, and then finally brings you to the DVD menu. From there you can use your desktop or remote control to select any of the special features or play the movie. Figure 11-1 shows how the screen should look when you insert a DVD—the DVD menu from the actual DVD (not Media Center) should appear.

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Figure 11-1: The DVD Menu should play when you insert a DVD.

From the DVD menu you can use the desktop or remote control to perform all of the actions you would perform using a standard DVD player and its remote control. You can play, pause, stop, fast forward and rewind, skip or repeat chapters, and access the DVD menu. Table 11-1 lists the actions performed from your remote control.

Table 11-1 Play DVD Remote Control Commands

Action	*Button*
Play DVD	Play
Fast Forward 3X	FWD one time
Fast Forward 40X	FWD two times
Fast Forward 250X	FWD three times
Return to Play	Play
Rewind 3X	REW one time
Rewind 40X	REW two times
Rewind 250X	REW three times
Return to Play	Play
Move to Next or Previous Chapter	CH +/-
Frame-by-Frame Advance or Rewind	Pause + FWD/RWD
Pause or Play from Pause	Pause

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Action	*Button*
Stop Play	Stop
Select Menu Item	OK
Turn-off Sound	Mute
Volume	Volume +/-

Media Center adds additional on-screen controls to the standard DVD controls. For example, when you fast forward or rewind, Media Center uses the same on-screen Time bar it uses when performing the same function for recorded TV shows. This allows you to see where you are positioned relative to the entire movie, as shown in Figure 11-2.



Figure 11-2: The Time bar appears when you are using fast forward or rewind while viewing a DVD.

On-screen displays such as the Time bar are present only when you are using them and then fade away after a few seconds.

When you advance or move backwards using the Next or Repeat chapter buttons on the remote control, an on-screen Time bar also appears, as shown in Figure 11-3.

At any point while watching a DVD you can press the Info button on the remote control (or right-click with the mouse) to display information about the DVD you are watching. This information is overlaid on the DVD while it is playing, as shown in Figure 11-3. It shows the name of the DVD, what chapter you are currently viewing, and information about the movie or content of the disc including running time, MPAA rating, and genre if that information is available.

Basic DVD viewing involves the controls listed earlier—play, fast forward, rewind, chapter skipping, and repeat. At the end of the movie or when you press Stop, you see the on-screen options shown in Figure 11-4.

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Figure 11-3: Display chapter information by pressing Info.

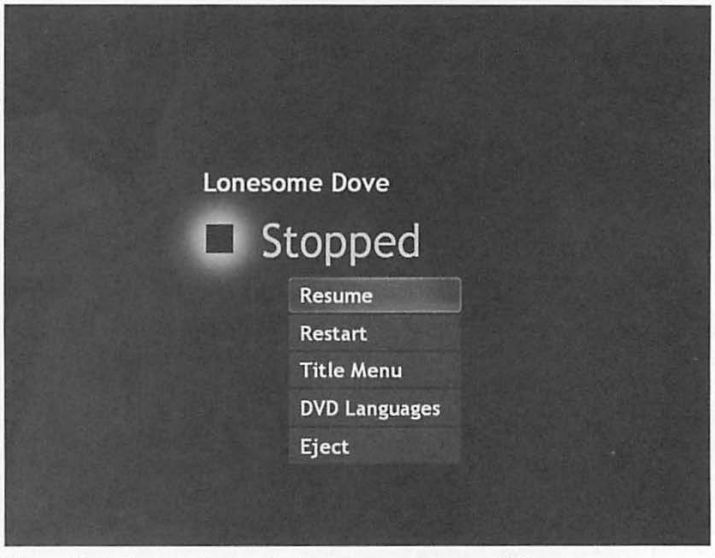


Figure 11-4: Options displayed when you stop playing a DVD.

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Choices include Resume (if you stopped in the middle of play), Restart, Title Menu, DVD Languages, and Eject. Choosing either Resume or Restart returns you to viewing the movie. Choosing Title Menu brings you to the main menu of the DVD. DVD Languages allows you to choose any language options available from the DVD. Use Eject to remove the disc from your PC, at which time you are returned to the Media Center Start Screen.

If you want to return to the Start Screen without ejecting the disc, use the Media Center button on the remote control. To return to the DVD from the Start Screen, press the Play DVD button.

You can also program your remote control's Skip and Replay buttons to either skip chapters or skip forward and back. To get to this menu, as shown in Figure 11-5, return to the Start Screen, choose the DVD item from the Settings menu, and then choose Program Remote Buttons for DVD.

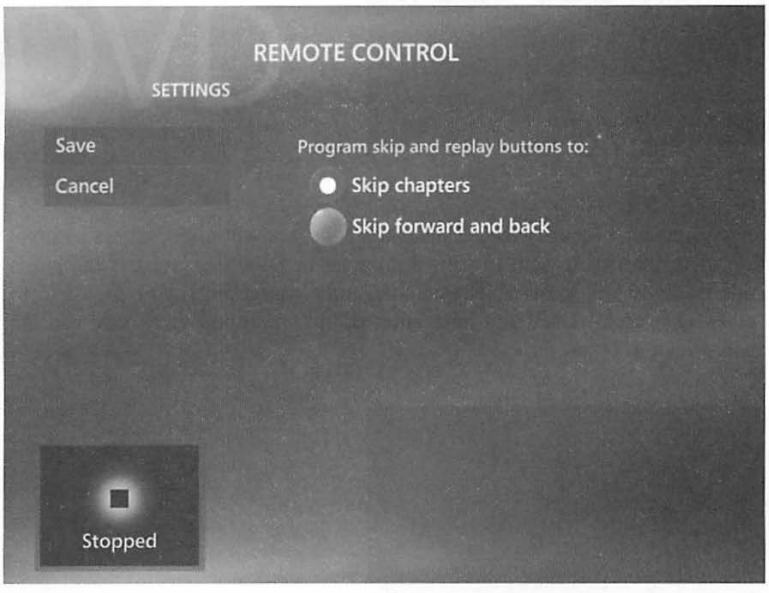


Figure 11-5: Setting screen to program remote control Skip and Replay buttons.

Note

Most commercial DVDs contain special features. They are reached by accessing them from the DVD menu. In just about every way, Media Center functions as a standard DVD player just like the one you may currently have attached to your TV. If you think of how you operate your current DVD player, you will quickly learn to play DVDs using Play DVD in Media Center.

Parental Controls

If you want, you can set parental controls for DVD playing. To do so, click the Settings button from the Media Center Start Screen, click the General button from the Settings menu, and finally, click the Parental Control button. You go the screen shown in Figure 11-6.

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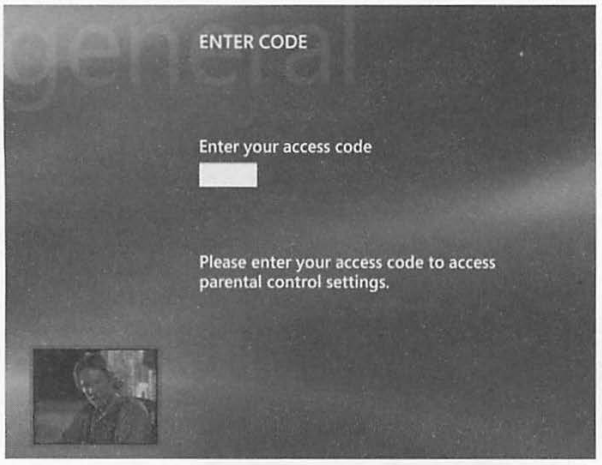


Figure 11-6: The first screen used to set parental controls.

You are asked to enter a four-digit security code. This is the code you will use to access parental controls and to override them when you want to view a program or DVD that exceeds the limits established. Enter a code that you will know and remember. After you enter it, you are asked to confirm the code by entering it again. Once you have entered and confirmed your code you are presented with the screen shown in Figure 11-7.

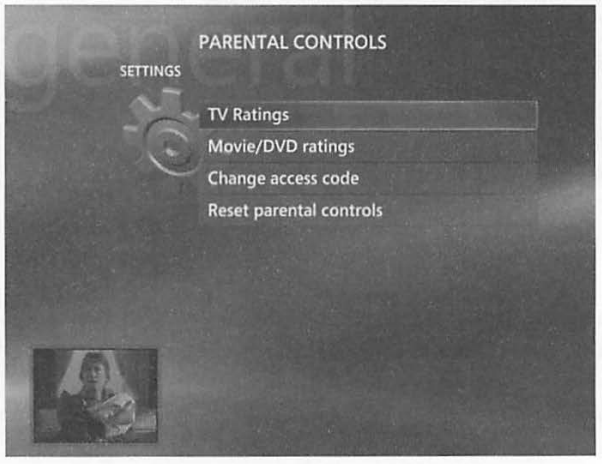


Figure 11-7: The Parental Controls menu.

At this point you can set controls for either TV viewing or DVDs and movies. Each has a different rating system so they are treated separately. For now, let's take a look at setting parental controls for DVDs, which use MPAA (Motion Picture Association of America) ratings. Figure 11-8 shows the options you have available for blocking play of movies.

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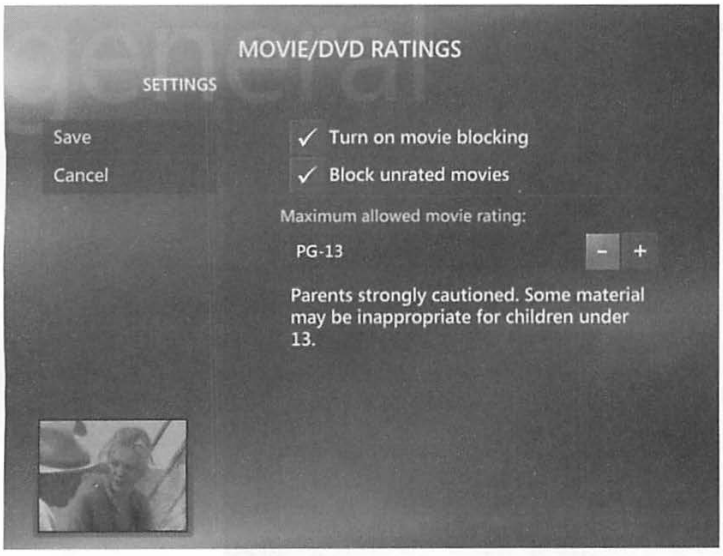


Figure 11-8: The DVD parental control settings.

The following options are available to you for blocking DVDs:

- **Turn on movie blocking.** If this box is not checked, movies will not be restricted. Check this box to turn on blocking based on the following items.
- **Block unrated movies.** This is a bit tricky. In the example here, *Lonesome Dove* is used for a specific reason—it is not rated by MPAA. As a movie made for TV, it does not have a rating and if this box is checked, it will not play even though it is considered family viewing. This gets pretty tricky because many adult DVDs do not always have a rating since they too are not rated by MPAA. You will need to use your best judgment on this issue, but as a rule, it is best to block unrated movies and override the block using your code when viewing a movie such as *Lonesome Dove*.
- **Maximum rating allowed.** The final option is only available when you choose to turn on movie blocking. It allows you to choose the maximum rating that can be viewed without parental control override. You select the highest rating and when a disc is inserted that exceeds those ratings or does not contain a rating, the viewer sees the warning screen shown in Figure 11-9.

To play a movie that is blocked, click OK on your remote control and then enter your four-digit code. The movie will play one time.

You can return to the Parental Controls menu and change the settings at any time. You will need to use your code to access the menu from this point forward. If you choose to not use any parental controls, select the Reset Parental Controls button and you can choose to remove the controls and remove your security code. Figure 11-10 shows the screen asking you if you want to remove your password and reset all of the ratings. Once you choose Yes, you receive a confirmation screen stating that the controls have been reset.

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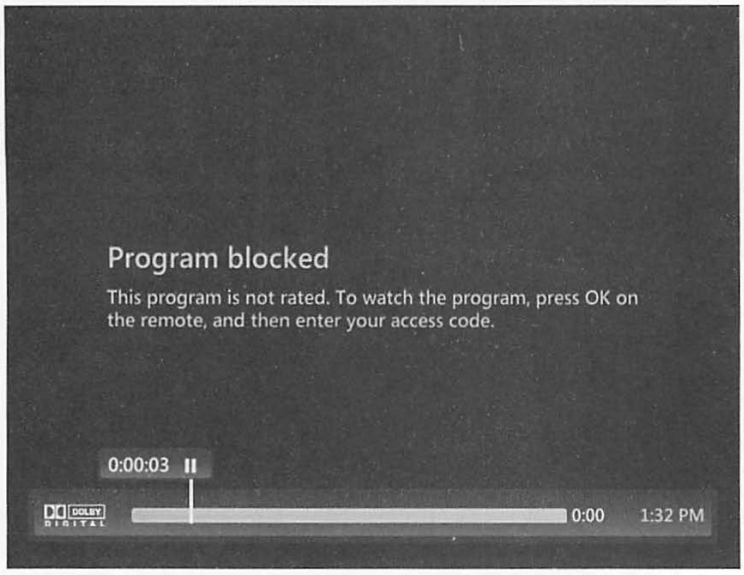


Figure 11-9: A warning screen appears when parental controls are exceeded.

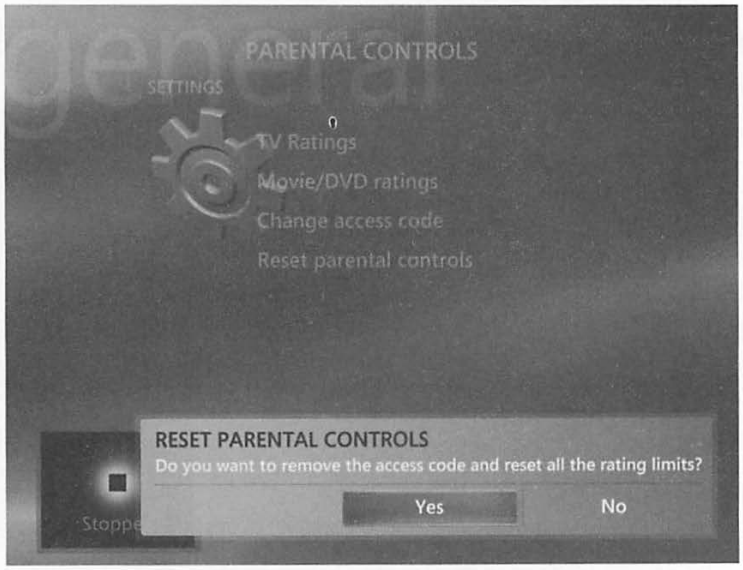


Figure 11-10: On-screen prompt to remove parental controls.

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Aspect Ratios

Movies on DVD come in a variety of aspect ratios. A movie that fills a standard TV screen is in the 4:3 aspect ratio, which was the standard for TV screens until recently. DVD movies began delivering movies in the aspect ratio in which they were originally made, typically 16:9. The widescreen version of a movie when played on a standard TV screen will contain a black set of bars above and below the widescreen presentation of the movie (this is sometimes referred to as *letterbox*).

Many newer TV sets are being made in the widescreen format. This allows all the pixels on the screen to be used to display the movie and allow it to fill the screen. Most widescreen TVs have an automatic method for detecting a widescreen video and the set will switch to a format that does not show the black bars, allowing the movie to fill as much of the screen as possible without distorting the aspect ratio.

Media Center treats DVDs as if they were being displayed on a standard 4:3 TV. If you play a widescreen movie, it will have the black bars at the top and bottom. If you are using a widescreen TV or computer monitor, it will auto-adjust to fill the screen, or you can use manual controls to switch to the widescreen format and cut off the black bars. Figure 11-11 shows a widescreen movie playing on a standard 4:3 TV that includes the black bars required to display correctly without distortion.



Figure 11-11: A widescreen format movie playing on a standard 4:3 aspect ratio TV.

Until the world once again settles on a standard for aspect ratio for TVs, black bars will likely appear on your display at times based on the video you are watching.

Burning TV Programs to DVDs

If your Media Center PC came equipped with a DVD burner such as a DVD+/-RW drive, or you have added one to your system, you can create your own DVDs in Windows XP and Media Center—if your computer came with special software for this purpose. Don't worry if it didn't; you can add a program to burn the TV shows you recorded to DVDs.

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Note

Media Center does allow you to burn TV programs to DVDs. Although not officially stated, it is easy to understand that with all of the issues regarding copy protection, copyright laws, and fair use of recorded TV programs in the digital age, such copying of programs is for personal use only.

This section looks at how to use the DVD-burning software provided for this purpose or use one that you purchase and add to Media Center.

Bundled DVD Recording Software

Your Media Center PC comes with the capability to burn CDs for music and DVDs for videos and recorded TV shows. It will transfer your files to a DVD and you can then play that DVD on other players such as a home or portable DVD player. This provides a basic burning solution, but it's not as full-featured as a third-party application designed for making DVDs with custom menus and adding your own personal touches, such as mixing different media on one disc.

Figure 11-12 shows the first step in making a DVD in Media Center. While watching a TV show (live or recorded) or a video, right-click the mouse or press the Info button on the remote control. As shown in Figure 11-12, a pop-up menu appears with the Copy to CD/DVD option.



Figure 11-12: Press Info to get to the Copy to CD/DVD menu.

You will need to have blank disc in your drive with enough room to copy the program. If a blank CD or DVD is present in the drive, you see the screen shown in Figure 11-13, where you can name the disc using the keyboard or the buttons on your remote control.

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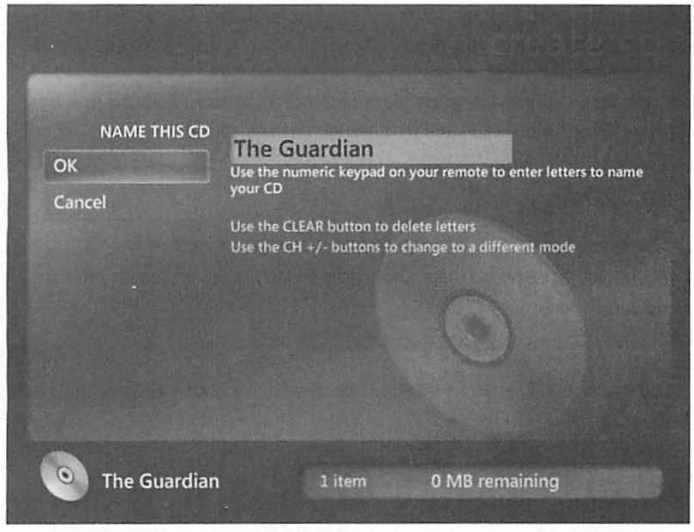


Figure 11-13: Naming a CD or DVD to be burned.

After naming your CD, you see the screen shown in Figure 11-14, which lists the items that you will be adding. You can add more than one item by clicking on the Add More button on this menu. You can also clear items and rename the disc.



Figure 11-14: Items to be recorded to CD or DVD.

In this example, a Video CD is being created and there is only room for one program. As a result, there is 0MB of space remaining on the disc. If a DVD were being recorded, there would be room for more shows.

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Once you have your show list completed, to start the burn simply click the Create CD or DVD button. You will see an on-screen prompt asking you if you want to create a disc with the selected files. After you click Yes, the burn begins.

Once completed, you have a disc that will play on your Media Center PC and just about any other DVD player. The standard user interface of Media Center will be used as the menu.

Note

The quality at which you record TV shows will have a strong impact on how many shows you can fit on a disc. Using high-quality recording will only let you fit about a 1-hour show on a DVD. Use lower quality settings during recording to fit up to 4 hours of shows on a DVD.

Another option is to use a third-party DVD authoring application, which should allow a bit more customization.

Using PrimeTime to Burn TV Shows to DVD

One of the first third-party applications that became available for Media Center was PrimeTime from Sonic. It is regularly featured in the Online Spotlight menu of Media Center and is easily downloaded or purchased and installed from a CD.

PrimeTime is a Windows Media Center application and adheres to the user interface and uses controls standard to Media Center. It is launched from the More Programs button on the Start Screen and is as easy to use as any other Media Center application.

The first step is to obtain a copy of the program. If you have high-speed Internet access, the simplest way is to download it from `www.sonic.com`.

After purchasing the program, or if you purchased a CD for installation, install it on your computer following the on-screen instructions. After installation and restarting your computer, PrimeTime will be one of the applications featured in the More Programs menu.

Click the PrimeTime button and you are sent to the program as shown in Figure 11-15. There is a bit of a "jump" when you switch to third-party applications. Even though it doesn't look like it, you are actually in Windows XP and the program is running as a stand-alone application. This is not a failing in any way; it is how additional applications are developed for use in Media Center.

As you can see, although the colors are different, the program is consistent with the look, feel, and menu structure of Media Center. The main menu contains a list of the programs you have recorded in My TV, shows how much room is available on a DVD, and allows you to sort your programs by name or data. As a Media Center application, it is able to get all of the information about the shows and it presents that information at the bottom of the screen as you move your cursor over the shows.

The size of the recording is shown with the show information. This is really useful information because you can see how large the recording is and use that information to decide how many shows you can fit on your DVD. Since programs can be added to a DVD recordable disc at different times, the on-screen display of the DVD disc in your burner also helps you match up programs to how much disc space you have available.

A DVD can hold 4.7GB of shows—but that's the maximum and there needs to be room for menus, file information, and other overhead required for DVD playing. In general, you should be able to get about 4.4GB on a typical burn.

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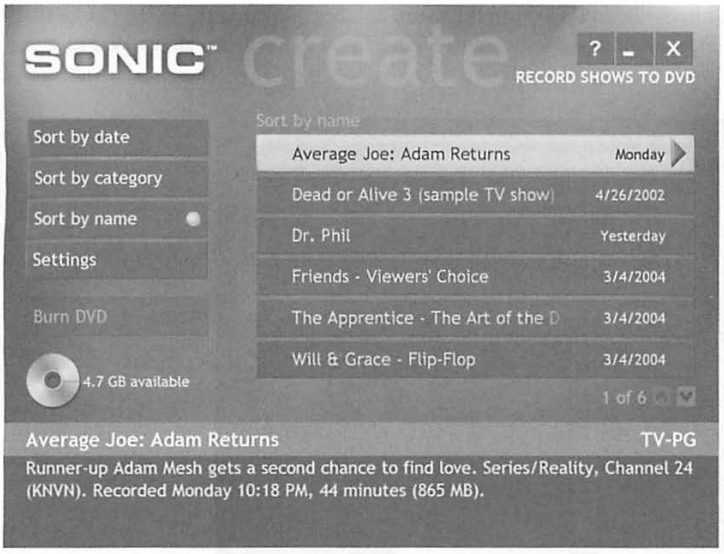


Figure 11-15: The Sonic PrimeTime menu.

Figure 11-16 shows some shows selected for addition to a DVD, and if you look in the bottom-left corner, the visual representation of the DVD to be burned shows how much room is left for adding programs. You add shows to the burn list by clicking on them; there will be a check mark next to the shows you have included.

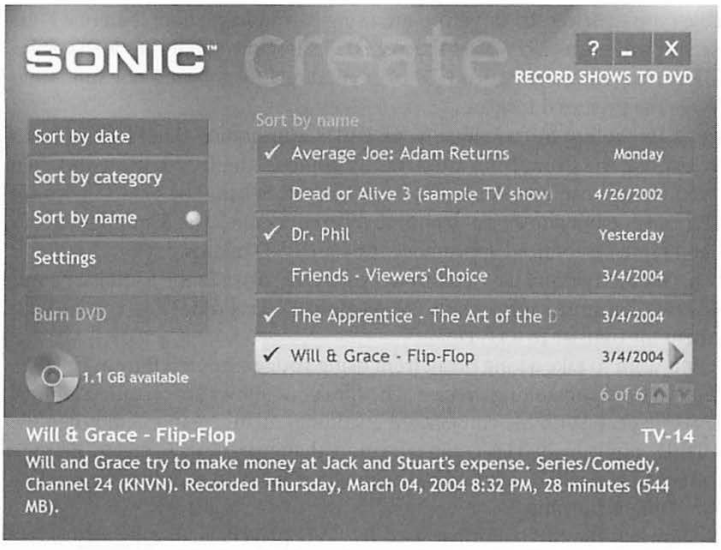


Figure 11-16: The DVD icon indicates how much room is left on the DVD once shows are added.

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At this point you could choose Burn DVD from the menu and begin writing the DVD. Before that, it is good to go to the Settings menu first, as shown in Figure 11-17. This menu allows you to make some important settings.



Figure 11-17: The PrimeTime Settings menu.

The General button enables you to select the drive you are using (if you have more than one DVD burner) and the type of disc you will burn to (DVD or Video CD). PrimeTime supports Video CD for systems that have only a CD burner. Although Video CDs offer good quality, they are not supported by all DVD players and DVD is the preferred format.

The Disc button offers you the ability to customize your DVD's appearance. The default menu on the final DVD will look just like the PrimeTime interface. By going to the Disc button and then selecting the Style button, you can choose from Smart Styles or Thumb Styles. The Smart Styles are the same in appearance as PrimeTime but allow you to choose different colors. The Thumb Styles, as shown in Figure 11-18, offer a more customized appearance for your DVD menus.

Once you have decided on a menu style and have confirmed your DVD drive in the Settings menus, you are ready to burn your DVD. From the main menu, select Burn DVD. PrimeTime checks your files and begins preparing them for transfer to a DVD.

Now, at this point you might want to take a long break from using your computer. Burning a DVD, even with a fast DVD burner, is a time-consuming process. The files your shows are recorded in must be converted to work on DVD players. With file conversion, encoding, menu creation, and then the actual writing of files to the DVD, a fully loaded DVD can take more than two hours to create. Because DVD creation is a sensitive process, you will be advised by the program that you shouldn't be running any other programs while the DVD is burning.

The encoding of the TV shows to the MPEG format used by DVD players is actually what takes most of the time—not the writing to DVD. For that reason, getting a faster burner will only help a bit. At the end of the process, you end up with an outstanding DVD, as shown in Figure 11-19. It will

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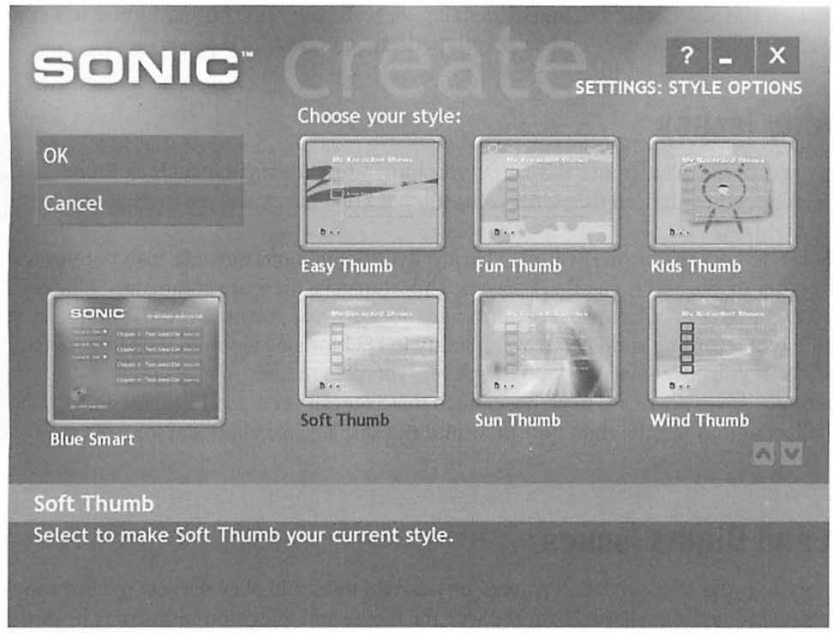


Figure 11-18: A menu of styles for the DVD menu.



Figure 11-19: A DVD created with PrimeTime containing TV shows.

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work perfectly in your Media Center PC, and, depending on both your DVD burner format and any home DVD player you plan to use, will probably work perfectly on other DVD players too.

Compatibility Issues

As referenced earlier, if you plan to use the DVDs you burn using a program such as PrimeTime on home DVD players, you will need to test for compatibility. DVD burners come in three versions: DVD+R, DVD-R, and DVD+/-R.

The disc you create on your burner will play back on your computer, but that may not always be the case with other drives and home DVD players. Unfortunately, there are competing standards and each home DVD player is different in regard to what formats it supports. Until the time that a standard for both DVD recording and DVD players' ability to read formats is solved, you will have to test whether the DVDs you create will work on the players you plan to use.

If you are adding a drive, prices are now low enough that you can get a good deal on a DVD+/-R drive. This will allow you to use the right type of format and disc for just about any player you will be using.

Copyright and Rights Issues

Speaking about playing your DVDs on other players, do the right thing and obey the law. You can copy your shows to a DVD for private viewing. But the way the movie and television industry is headed, you might find that is not the case in the future. When you record a movie from cable or satellite, you essentially are eliminating the potential sale or rental of that DVD. It gets more serious if you burn that movie to a DVD and give it to someone else.

Just as with music, rights issues are being battled in court every day. The reason for this is that people have abused their "fair use" rights to content by copying and sharing. If you want to retain your rights to copy media such as music and TV, respect the law and don't distribute your DVDs. Keep them for your own use and help keep the laws fair for everyone.

Summary

Unlike computers in the past, Media Center PCs have been optimized to make playing video and DVDs look as good as if you were playing them in a consumer DVD player. As part of your overall entertainment center, playing DVDs with your Media Center PC is easy and adds features not found on home DVD players.

In addition to playing DVDs, if your computer has a DVD burner you can create DVDs of the TV programs you recorded using My TV. Media Center comes equipped with a program for burning recorded TV shows, and your computer may have come equipped with an additional Windows XP program that can perform that task. If you want to go beyond the Media Center experience, you can purchase PrimeTime from Sonic. PrimeTime is a Media Center application designed to burn your TV shows to DVD from within Media Center. If you are planning to share your DVDs, be sure to look for a DVD burner that writes both DVD+R and DVD-R discs so that your discs will work on most any standard DVD player. TV shows are copyrighted material and you will need to limit burning DVDs or Video CDs for your personal use.

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Part IV

Music and Radio

Chapter 12
Playing Audio Files and CDs with My Music

Chapter 13
Managing Playlists and Music Libraries

Chapter 14
Listening to Broadcast and Internet Radio

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Chapter 12

Playing Audio Files and CDs with My Music



Remember when you had a stereo? It was a box that connected to turntables, cassette decks, CD decks, and a set of giant speakers? Oh, there's one in your living room right now? That's okay—a good stereo is a prized possession and you probably will want to keep it right where it is if you like the sound. When people say "stereo" they are most often referring to the device they play their music on. But as an owner of a Media Center PC, you probably already know that your PC makes a much better "stereo" than any other device.

Media Center PCs aren't amplifiers—they rely on powered speakers or connection to your current stereo for amplification and the quality of sound. What they can do better than any home stereo is host vast quantities of music and enable you to access it with ease. Whether you like using audio CDs, ripping your audio CDs to MP3 files, or downloading music off of the Internet, PCs handle music extremely well.

With the ability to store vast amounts of music, amazing things happen. First, you start listening to music you probably forgot you had since it's really easy to access songs using a PC. Second, you start thinking about music in terms of mixes (or *playlists*) as opposed to albums. With all of your music in digital form and a CD burner, you can cherry-pick your favorite tracks and make a CD of them in a matter of minutes. The more you mix, the more you want to put all of your music on your PC. With a lot of music files comes the need for a great user interface that lets you find any song you want quickly.

Media Center is great at playing music and making music easy to find and manage, plus it even makes it a highly visual experience. This chapter takes a look at how Media Center does music right.

Real-World Audio

Earlier in the book I talked about how I ripped all of my CDs to MP3 files and then sold all of my CDs. Although I put most of the music on a portable player that fits in the palm of my hand, I still have to use CDs for my car. My wonderful new Honda Accord has a nice six-disc CD changer. After cursing and grumbling about how it should have been a six-disc MP3 changer, I resigned myself to the fact that I would need to make audio CDs for my car. I have yet to actually make a disc that is an "album" the way I bought it. Until writing this I never realized that every CD I have burned is a compilation of favorite songs. When I feel there is a song missing I just go back and burn a new CD. At about a nickel a disc and with a really fast burner, music CDs have literally become a disposable item for me. I'm sure

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Real-World Audio *(Continued)*

the music industry is not happy about that, but hey, perhaps they shouldn't have charged me $18.95 for a CD with only one good song on it for the last twenty years or so. Thank goodness for iTunes and Napster and 99-cent downloads of that one good song.

Getting Your Music Files Ready to Play

Media Center works with Windows Media Player in Windows XP in a number of ways. As an operating system built as an extension of Windows XP, Media Center uses Windows Media Player as its music-handling engine—it manages the music rights and file management.

Note

If you only plan to play audio CDs and do not plan to store music files on your hard drive, you can skip this step and begin playing your CDs directly from Media Center.

Content Protection

Windows Media Player controls rights management and music licenses for Media Center. Let's take a look at how Microsoft describes content protection:

About content protection for My Music

"Licensed or protected files are digital media files that are secured with a license to prevent illegal distribution. The license can specify whether it expires and how you can use the file. The terms of the license are specified by the person or company that provided the file. Just like in Windows Media Player, Media Center cannot play protected files without a license.

"If you attempt to access a file that requires a license, you may be prompted to acquire a license before you can begin playing it. There are different ways you can acquire licensed files, but the most common way is to download them from content providers (such as record companies). The content provider may issue a license when you download the file. Otherwise, when you play a file for which you do not have a license, Media Center attempts to acquire one. You may be required to register, provide a unique player ID, or pay a fee first, depending on the content provider."

To work within the copy-protection parameters of downloaded music and music you burn from audio CDs, My Music in Media Center must work hand-in-hand with Windows Media Player. When you use a music service such as Napster to purchase or listen to music from within My Music, Windows Media Center is managing rights and licensing.

Modern-day music piracy and pressure from artists and the music industry have brought us to the place where such copy protection is a fact of life. Accepting this, let's look at how to set up your computer to allow Media Center to work with Windows Media Player to manage your music library so

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that you can get to actually listening to it in My Music. More on copy protection and rights management is covered in Chapter 13.

Cross-Reference

Chapter 13 is devoted to managing your music files and playlists.

Setting Up Your Music Files for the First Time

If you have been "ripping" CDs to your computer or purchasing music online and have a collection of MP3 files, you will find Media Center pretty easy to use. Also, if you have been using Windows Media Player or previous versions of it, you will also be pretty far ahead when it comes to music management.

You can *rip* (convert audio CDs to MP3 or WMA file formats) directly from within Media Center, or you can use all of the files you currently have. The first step in working with an existing music library is to know where your music files are located. You may have them conveniently located in your My Music folder or spread across folders, hard drives, or even other computers on a home network.

You control which folders Media Center uses to search for your music. You can perform this task one time, and as you add files to those folders it automatically finds additional music, or you can go back at any time if you create new music folders outside of the ones you currently have.

Begin selecting your music folders by choosing Add Music from the My Music menu as shown in Figure 12-1.

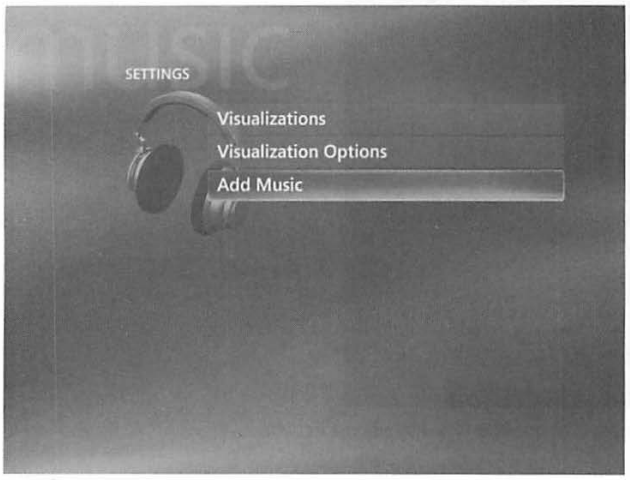


Figure 12-1: Choose Add Music from the My Music menu.

From the My Music menu, select Add Music, and you arrive at the menu shown in Figure 12-2. This allows you to add or remove folders that My Music will search for music files. Select Add Folders and you arrive at the next step in the process, as shown in Figure 12-3.

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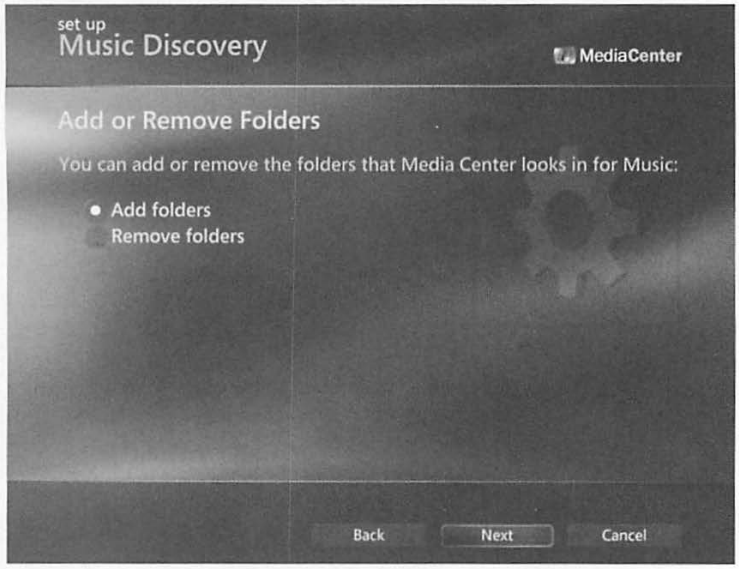


Figure 12-2: The Add or remove music folders menu.

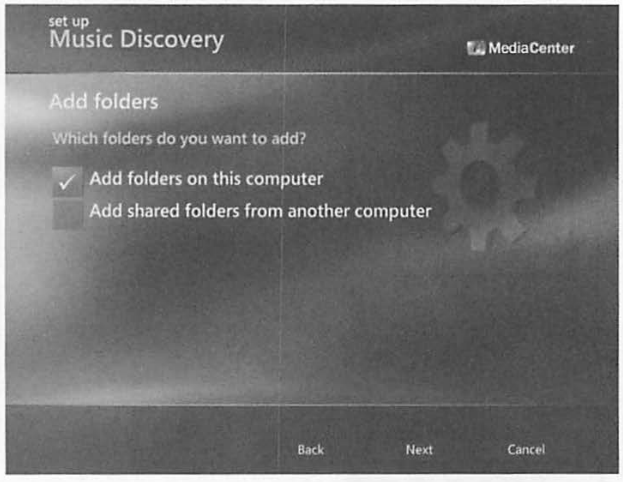


Figure 12-3: Add folders from this computer or one connected to a home network.

If you are only using one computer, you can choose the Add Folders on this Computer option. If you have a home network with file sharing turned on, you can use the second option to add shared folders from another computer. The process of finding folders is the same for each, and in this example we will find files on a single computer by selecting the first option and clicking the Next button.

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In Figure 12-4, the screen shows a list of all of the available drives or folders located within those drives. Clicking on the + buttons expands the drive folders so that you can individually select folders. Next to each of the drives or the folders are boxes that you check to indicate that you want to include them.



Figure 12-4: Check drives or folders that contain music files you want to include.

If you want to include all music files, you can simply check the hard drives and Media Center will search the drive for music files. This may be temping at first, but what happens is that Media Center spends a lot of time looking at your hard drive for music files each time you start My Music. For this reason, you will get a faster response by going in and selecting just the folders that contain music. In Figure 12-4, even though the Music folder is expanded to see what is inside, the folder is checked but not the hard drive it is located on.

After clicking the Next button once you have selected the drives or folders, you see the screen shown in Figure 12-5 confirming which folders Media Center will use to find music files. You can select Finish at this time.

You can return to Music Settings at any time to add or remove folders using the same method.

Listening to Music with My Music

Media Center is full of shortcuts to help you get places quickly. From the Start Screen shown in Figure 12-6, you see that when you highlight My Music, to the right of the button appear album covers of the most recently played music you've listened to in Media Center. These not only list your most recently played albums, but they also are shortcuts that you can click on to begin playing them.

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Figure 12-5: Completing the selection of music folders.

When you select My Music from the Media Center Start Screen, you see the menu shown in Figure 12-6. It displays lists of music that you have added to My Music in the process described at the start of this chapter. In this example, it is showing albums. The cover art for the albums was obtained along with track information when the CDs they were created from were "ripped" to the hard drive. This is part of the ripping process—Media Center goes to the Internet and obtains enhanced content information for music files.

The left side of the screen lists the primary options for sorting your music files. With a large number of files, organization is crucial to find what you want to listen to and My Music uses intuitive sorts for this purpose.

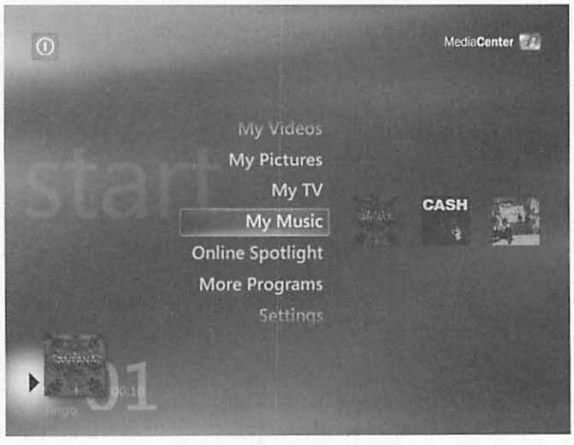


Figure 12-6: Recently played albums are shortcuts when you highlight My Music on the Start Screen.

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Following are the choices to sort and find music:

- **Albums:** Sorts by the name of the album.
- **Artists:** Sorts by the artist name.
- **Playlists:** Sorts by the names of playlists you may have created.
- **Songs:** Sorts by the name of the song.
- **Genres:** Sorts all music by the genre that has been assigned.

As you can see, having properly ripped your files with track information is crucial. If you simply ripped your CDs without having Media Center (or any other ripping application you may have used) go to the Internet to find track information, or did not enter it manually, it's going to be hard to find your music. If you have not done this in the past, start doing it. Windows Media Player, working with Media Center My Music, attempts to find all of this information for you in the background over time. It's a long process and you need to be connected to the Internet.

Note

My Music enables you to find music in a number of intuitive ways. Just as with My TV, it puts the controls and information you need in front of you just when you need them.

When you click on one of the buttons to find music sorted by that category, you are brought to a screen, such as the one shown in Figure 12-7 and Figure 12-8, containing "pages" of music listings. Media Center does not scroll screens, but it does scroll lists such as these. You can scroll the list using your mouse or direction keys on the keyboard or remote control.

Figure 12-8 shows a song list of more than 5,000 songs. When you select the Songs button from My Music, with that many songs to recognize you will have a short delay before you see this list. That means that My Music is getting the list of songs and it will show an on-screen "busy" symbol whenever it needs to do some serious searching.

You can page up or down using the Channel/Page up or down buttons on the remote control. It will move the list up or down a page at a time, which is better but still may not be the best way to get to a song if you know its title.

If you know a song title and the artist or album name, you may be able to find it quicker by sorting by album or artist. That reduces the number of items you need to scroll or page through. Figure 12-9 shows music sorted by Artists. The 5,000 songs are now in a list of about 280 artists. It's still a lot of items to scroll through, but it's a nice way to refine the hunt.

Regardless of how you sort your music files, you may want to search for songs rather than scroll or page through long lists. Figure 12-10 shows the Search menu, which you can find on the My Music main menu. This works great for finding music quickly, but only if you have some idea of what you are looking for. Enter some text into the Search field, and Media Center searches all data fields in the music files, including song name, artist, album, and genre. Figure 12-10 shows a search with the word "new." It returned songs, artists, albums, and genres.

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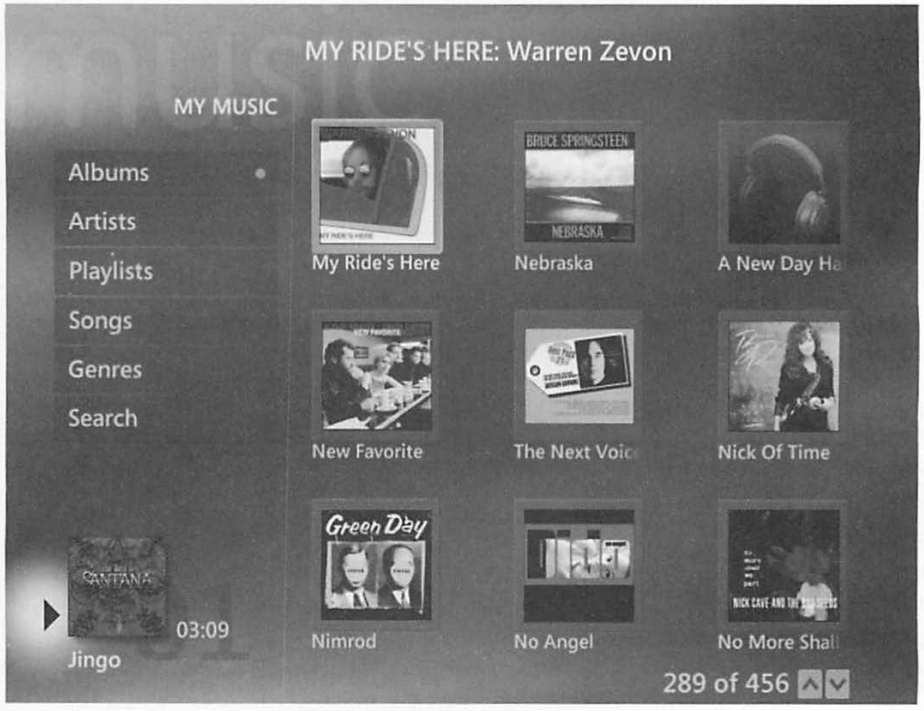


Figure 12-7: A listing of albums including CD cover art.

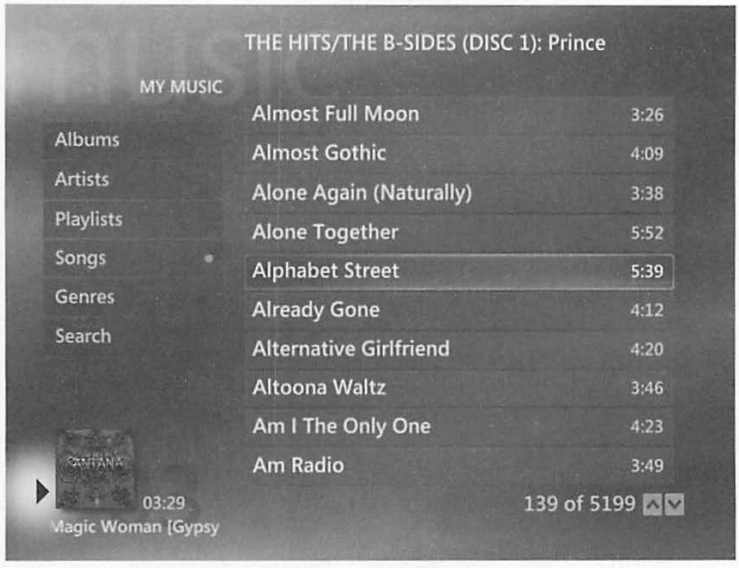


Figure 12-8: The first page of a very long list of songs.

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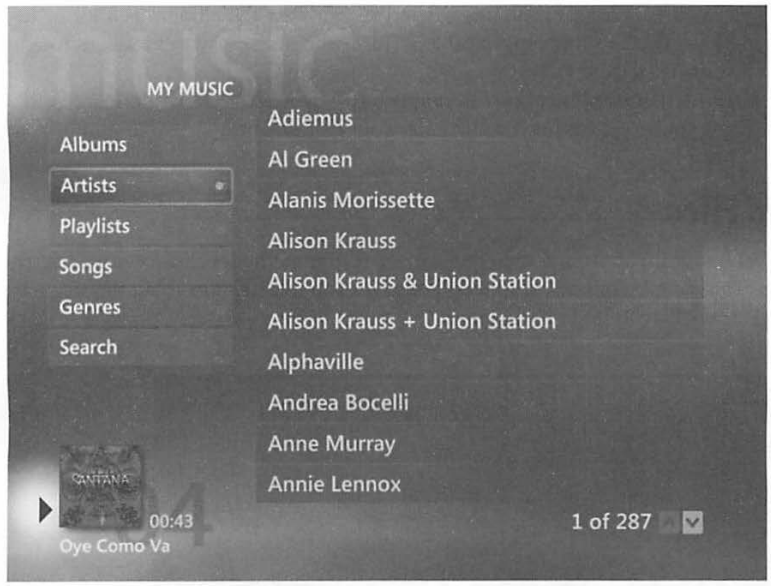


Figure 12-9: Narrow the field for finding songs with Albums or Artists sorts.

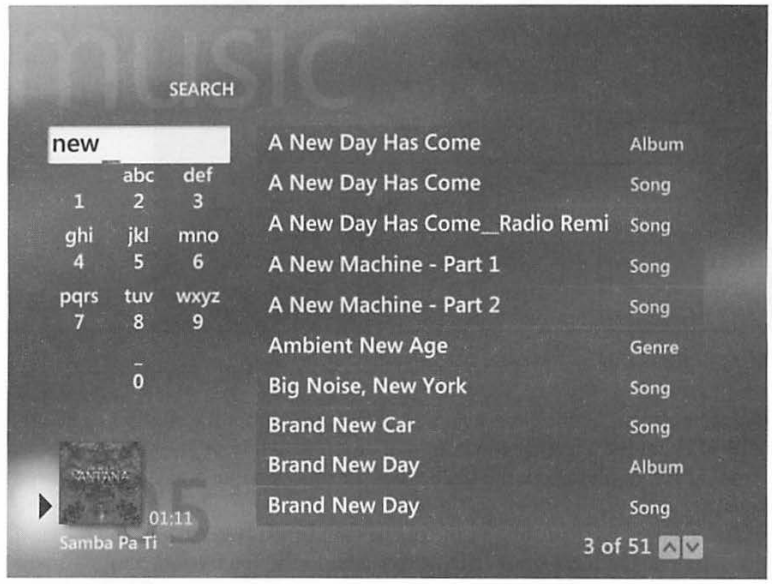


Figure 12-10: The search function in My Music.

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The sorts are displayed as lists, except in Albums where you can view the albums as a list or by their album cover (if you have that information available). This is the nicest way to browse through music files because it's a very visual experience.

By using any of the methods described here you can simply browse your collection or find a specific song quite easily. Now that's you've got finding music under your belt, the next step is to play it.

Playing Music Files

Once you have found the music you want (using any sort or search method), click on its name to find out more about it. The Song Details menu appears and gives you information about the song, as shown in Figure 12-11. Click Play to listen to the track.



Figure 12-11: The Song Details menu.

If you are playing music by album, Media Center puts all of the tracks from the album in a queue. You can see the queue by clicking the View Queue button at any time while in My Music. You can mix and match songs from artists or albums in the queue, but for this example one album has been selected and is in the queue.

It plays the song you selected or the first song in the queue—and then it keeps playing the next songs in the queue. The song playing has a graphic equalizer next to the track name and the name of the track is also displayed in the Now Playing window on the bottom-left corner of the screen, as shown in Figure 12-12.

When you click a song in the list of songs, Media Center starts playing songs at that point and keeps playing until the list has been played. This also applies to other lists as detailed in Table 12-1.

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Figure 12-12: A song playing in the queue with volume bars next to it.

Table 12-1 Play Order for Songs

Sort Order	*Plays*
Songs	Next song in queue. Stops at the end of the queue.
Albums	Next song in album. Stops at the end of the album.
Artist	Next song in list of songs by artist. Goes from album to album by the artist.
Genre	Next song in list of songs of the same genre. Stops at the end of the genre.
Search	Next songs in search results. Stops at the end of search results.
Playlists	Next song in playlist. Stops at the end of the playlist.

Figure 12-12 also shows that there are a number of menu options once you start playing music in the queue. In each search or view, once you start playing a list of songs the following options are available:

- **View Cover:** This option shows a large version of the album cover on the screen for each song playing. This screen is especially nice when viewing on a TV because it is highly visual.
- **View Queue:** All of the tracks in the queue are presented. This allows you to see where the song is within the grouping.
- **Shuffle:** Clicking this option shuffles all of the songs in the view or search being played.
- **Repeat:** Clicking this option repeats all of the tracks in the view or search when the end of the list is reached.

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- **Buy Music:** If you are connected to the Internet, this option jumps you to a music search powered by Windows Media Player as shown in Figure 12-13. The nicest part about the Buy Music search is that Windows Media Player starts with the artist you are listening to and finds virtually all music from that artist from different online vendors. Once you select an album, you can then choose the vendor from a list if you decide to purchase music.
- **Visualize:** The screen switches to a highly visual, kinetic display. From the Settings menu you can customize visualizations—such as random patterns and displaying track information at all times.

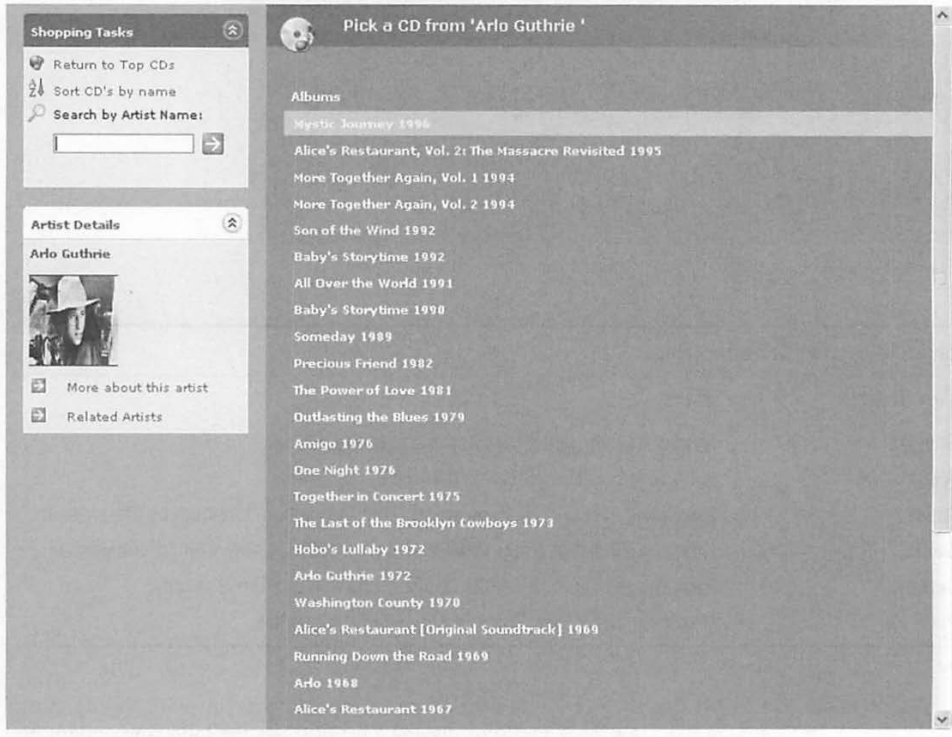


Figure 12-13: The Buy Music button brings you to a search of music from the artist.

Tip

Once you have learned to find the music you want to play, you control it using the same controls used in My TV and Play DVD from the on-screen controls or the remote control.

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Playing and Copying Audio CDs

When you place an audio CD into your optical drive you see an on-screen prompt asking you if you wish to play the audio CD. If you choose OK, it automatically adds the tracks from the CD to the music queue and starts playing. The screen changes to the queue mode and if you are connected to the Internet, Media Center looks up the track names and obtains the album art, as shown in Figure 12-14. If you are not connected to the Internet, the songs are labeled by track numbers.



Figure 12-14: The menu for playing an audio CD.

All of the same play options are used for playing CDs as for playing audio files. You can choose to play the songs in random order or shuffle them, display them by individual song, view all of the tracks on the CD, or use visualizations. In addition to those controls, there is the Copy CD option.

One of the biggest advantages of working with Media Center is that you can store any audio CD on your hard drive and add it to your music library. When you store the CD on your computer, the next time you want to play it you will not need the CD because you will be able to play it from the music files stored on your hard drive.

Note

When you copy CDs to your hard drive using My Music, you can add them directly to your My Music folder.

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Choosing Copy CD adds the CD you are playing to your hard drive with a choice of using copy protection on no copy protection. Here is how Microsoft describes this choice:

> Another way to acquire licensed files is by copying CDs with the Copy Protect Music check box selected in Windows Media Player settings. By using this option, all the tracks you copy are protected files, and licenses are issued at the same time. If you have not already selected this option in Windows Media Player and attempt to copy a CD in Media Center, you will be prompted to turn on or turn off this option at that time.

The menu choices to copy protect music are shown in Figure 12-15, and they change the settings in Windows Media Player as described above. If the CD requires a license for copying, you will need to choose to copy protect the file. This limits the playing of the files to your computer. Because most CDs will not require a license to be copied onto your computer, you can choose to not copy protect the CD, as shown in Figure 12-15.

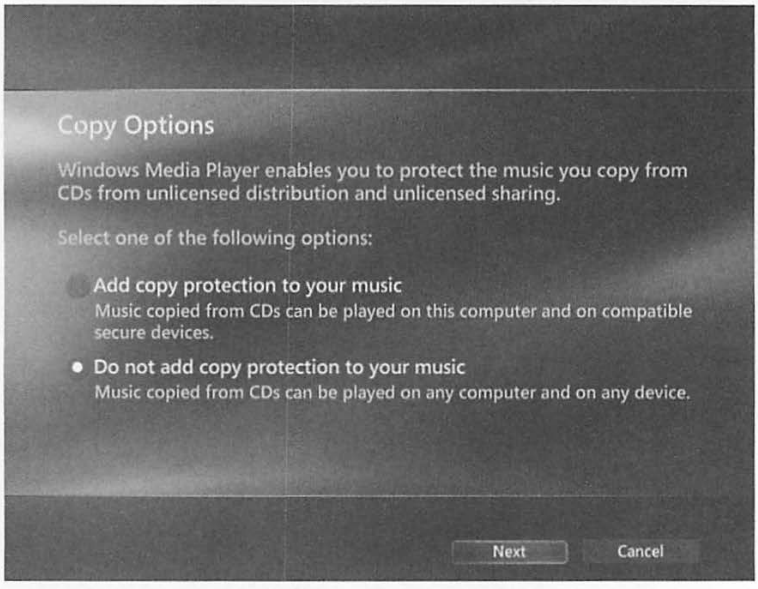


Figure 12-15: Choosing not to copy protect the CD copy.

If you choose not to copy protect the CD, you are shown a menu that reminds you that you are responsible for the "appropriate use" of the music being copied. Microsoft has gone to the extreme to comply with the laws regarding copyrights and music licensing, so you will have to view menus that display warnings about the lawful way to copy music. You will see this series of screens the first time you attempt to copy a CD. After the first time you copy a CD, you will not see the screens on future CD copies.

After you are past the copy protection screens, you see a menu that shows you the copy options shown in Figure 12-16. You can copy CDs at varying degrees of compression, but to change

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the setting you will need to return to Windows Media Player. This menu will remind you of that option.

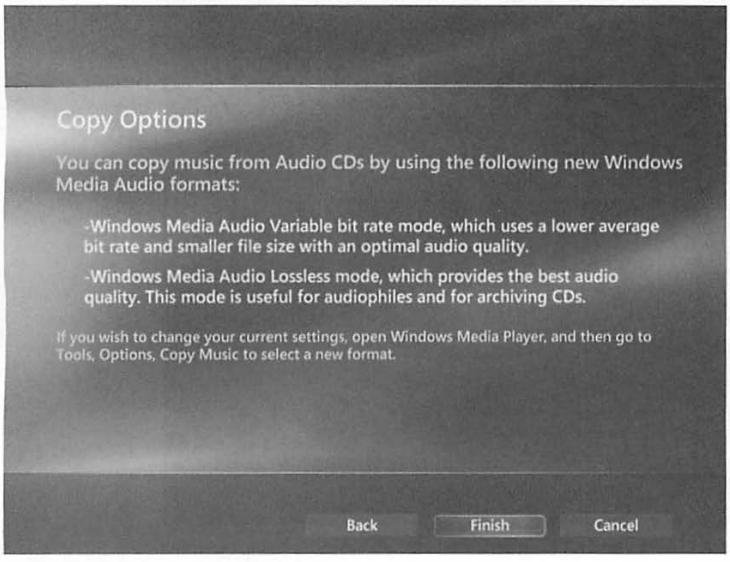


Figure 12-16: The Copy Options screen.

Note

Media Center uses Windows proprietary WMA file formats for copying CDs. The files are fully supported by Media Center but may not be the best choice overall if you also plan to use the files on portable MP3 players or devices that do not play WMA files. If that is the case, convert your CDs using an MP3 ripping program and add the files to your music library from Windows Media Player.

After the one-time session explaining copy protection and file formats, you are able to copy your CD using the Copy CD button while the CD is playing, or even easier, by pressing the red Record button on the remote control.

Media Center copies the entire CD—you cannot choose to only record certain tracks. The track being copied is indicated by a spinning CD icon with the percentage of track copied appearing next to it. Songs that have been copied have a check mark with the track time next to them, as shown in Figure 12-17.

Media Center copies each track until the end of the CD is reached. You can continue to listen to the CD while it is being copied.

To listen to the CD that has been copied, you can click on the album from the main My Music menu where recently played music is listed or find it using any of the sort and search methods.

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Figure 12-17: CD being copied (track one has been recorded and track two is being recorded).

Summary

Current legal issues surrounding copying music and purchasing music online require Media Center to manage music rights. It does this by using Windows Media Player's rights management controls. Before using any existing music files on your computer, you must first add them to Windows Media Player's music library. Media Center will recognize and play all music files found in that library.

Media Center can play music files stored on your computer and also play audio CDs. Music from any source can be viewed by song, artist, album, genre, or playlist. You can find songs by performing searches that span the same categories.

CDs can be copied directly from within Media Center, and they are automatically added to the music library and use the same file formats and copy protection as Windows Media Player.

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Chapter 13

Managing Playlists and Music Libraries



Chapter 12 looked at how to get music from various sources into your Music Library. With the ability to have thousands of songs in the library, managing them becomes a big issue. Although you can sort your music by artist, song, album, or genre, finding and playing the music you want needs an even more powerful tool—Playlists.

Think of your music library as a menu of songs. With Playlists, you go through the menu, select the songs you want in the order you want to play them, and when you are through you have a list of just the songs you want to play. That *Playlist* can be saved, named, and then played. Playlists can contain any combination of songs from any source, and you can edit and change the Playlist whenever you want. To Media Center, Playlists are the same as CDs or albums—you play them and control them just as you do those media.

This chapter explores how Media Center works with Playlists and how you create them. It also takes a look at how to manage your music library by knowing how to get all the information about each song attached to it and how to secure rights to play it on your computer.

Managing Playlists

In Chapter 12 you learned how Media Center works with Windows Media Player to build music libraries. Media Center also works directly with Windows Media Player to create Playlists, and all of the Playlists that you create in Windows Media Player can be used in Media Center.

There are two types of Playlists:

- **Auto Playlists:** Windows Media Player automatically generates Playlists for you. It comes with a number of auto Playlists to get you started. These lists contain most recently played music, music you have added but have yet to listen to, and music you play often. Media Center uses the Auto Playlists and they will include songs that you played both in Media Center and Windows Media Player. As you will soon learn, you can create your own auto Playlists.
- **Playlists that you create:** Using Windows Media Player or Media Center and all of the music you have added to your library, you create and name a Playlist, add songs to it, and save it.

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When you choose the Playlist button from My Music, you are taken to the screen shown in Figure 13-1. If you have not yet created any of your own Playlists, it will contain a list of auto Playlists that have been built from your music library.

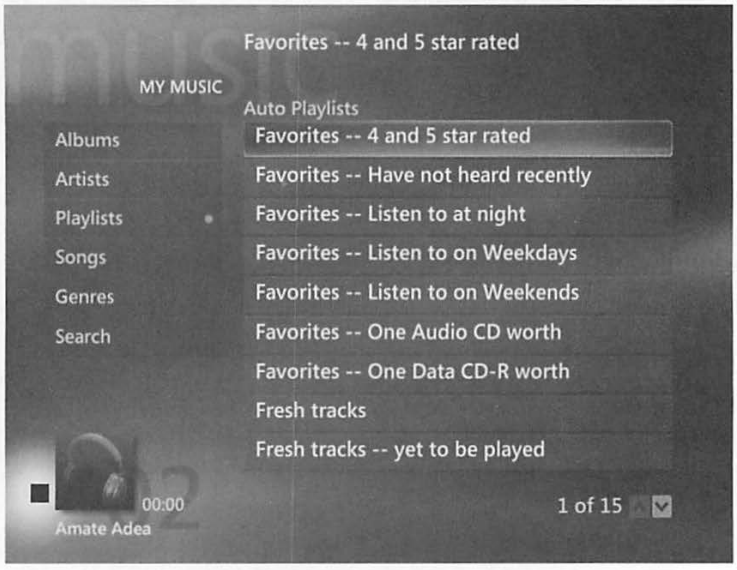


Figure 13-1: My Music Playlist menu.



Figure 13-2: The Fresh Tracks -- Yet to be Played menu.

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When you select any of the auto Playlists you will see that Windows Media Player has been hard at work keeping track of what songs you have played, when you played them, how often you played them, and also what songs you have added to your library that you have yet to play. Figure 13-2 shows Fresh Tracks -- Yet to be Played from the auto Playlist menu. These are songs that were added recently but have never been played.

To fully understand how auto Playlists assemble lists of songs for you, Table 13-1 lists each of the auto Playlists that come standard with Windows Media Player and Media Center.

Table 13-1 Auto Playlists Created by Windows Media Player and Media Center

Playlist	*What it Contains*
Favorites -- 4 and 5-star rated.	Either by a rating that was entered into the song data or by the amount of play you have given the track, this list contains songs that have the best ratings.
Favorites -- Have not heard recently.	A list of songs that you have played often in the past but have not played recently.
Favorites -- Listen to at night.	A list of songs that you have played in the evening.
Favorites -- Listen to on weekdays.	A list of songs that you have played primarily on weekdays.
Favorites -- Listen to on weekends.	A list of songs that you have played primarily on weekends.
Favorites -- One audio CD worth.	A list of most-played songs that would fill one audio CD. Because Media Center does not allow you directly burn an audio CD, this is more a list that would apply to Windows Media Player where you can burn audio CDs.
Favorites -- One data CD-R worth.	A list of most-played songs that would fill one data CD. Because Media Center does not allow you directly burn a data CD full of MP3 or WMA files, this is more a list that would apply to Windows Media Player where you can burn data CDs.
Fresh Tracks	A list of songs you have added recently by copying from an audio CD or online purchase.
Fresh Tracks -- yet to be played.	Fresh tracks that you have added but have not listened to.
Fresh Tracks -- yet to be rated.	Fresh tracks that have no star rating yet.
High bit-rate media in my library	A list of songs that have been saved with little or no compression.
Low bit-rate media in my library	A list of songs saved with the greatest amount of compression.
Music tracks that I dislike	You can manually identify songs that you dislike in Windows Media Player, or it will identify songs you never play over time.
Music tracks I have not rated	A list of the songs that have no rating.
Music tracks with content protection	Songs that you have obtained copy protection for or have purchased online that have copy protection.

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You could use the auto Playlists shown in the table and some of the categories may be a good fit. On the other hand, you may want to put the power of auto Playlists to work creating lists of songs that really match your music tastes. The good news is that you can define and create your own auto Playlists.

Creating Your Own Auto Playlists

Auto Playlists are worth creating because they track your media library and can automatically update Playlists for you. You can create a Playlist, for example, of your favorite pop songs. The list would contain all of your favorites, but what if you added a few new songs to your music library? You would have to go to Windows Media Player and edit the list by manually adding the new songs.

With your own auto Playlists you can create a list of favorite pop songs and have Media Center add any new pop songs you add to your music library in the future. You can even set it where the songs are only added if you rate them or play them a few times first to make sure that they are "favorites."

To create your own auto Playlist, you need to leave Media Center and go to Windows XP and launch Windows Media Player. Once there, click on Music Library from the menu choices on the left side of the screen, and from the top menu bar choose Playlists, as shown in Figure 13-3. Choose Auto Playlist and you see the menu shown in Figure 13-4, where you can enter the criteria you choose for your auto Playlist.



Figure 13-3: Menu to begin creation of Playlists.

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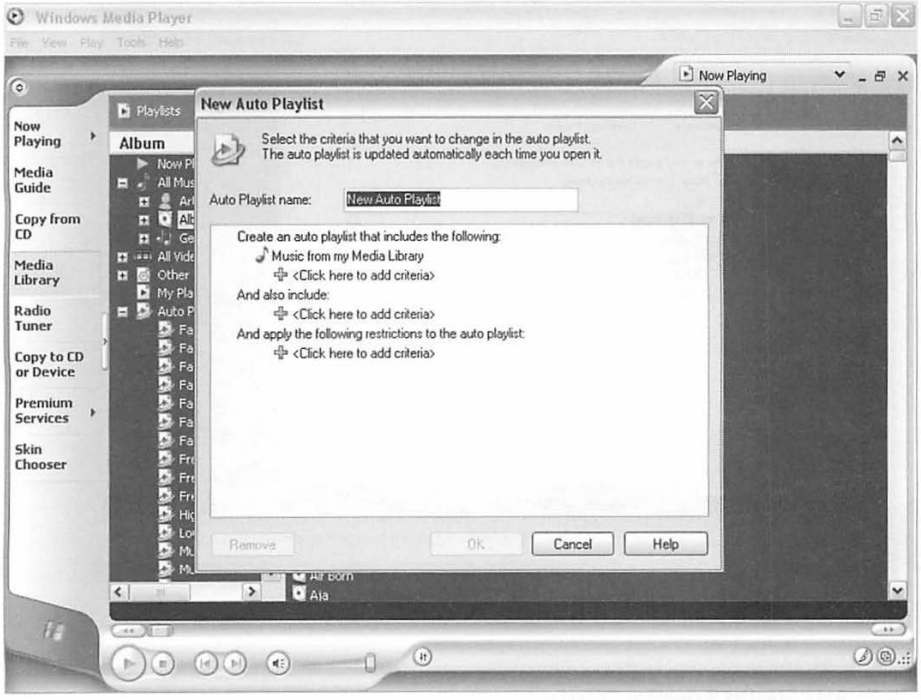


Figure 13-4: The New Auto Playlist creation menu.

The New Auto Playlist menu enables you to define the music you want to add to your auto Playlists and also some restrictions for the selections.

The first choice you need to make is the options for Music from My Music Library. When you click the Click Here to Add Criteria button you are presented with a list of options, as shown in Figure 13-5. You are shown a list of the most commonly used criteria, but at the bottom of the list is a More button. It is good to look at all the possible criteria, and clicking More shows you every possible option.

The criteria list is quite long, but it shows how much control you have when creating an auto Playlist. To understand how dynamic this tool is, Table 13-2 gives you a look at the options.

You can choose just one criterion, or combine several of them to refine your Playlist to a very specific set of matches. For example, in Figure 13-6 an auto Playlist has been defined as Pop, sorted by date released in descending order, and limited to one hour. The list has been given the name "Pop History."

Note

Where do the criteria for songs come from? It is a combination of "tags" that are entered when the song or album is copied to the music library from an Internet music information source or from manual entry of the data, plus file type and play history collected by Windows Media Player.

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Figure 13-5: The Selecting Criteria menu.

Table 13-2 Auto Playlist Selection Criteria

Album artist	Language
Album title	Limit number of items
Artist	Limit total duration to
Audio rating	Limit total size to
Bit rate	Media type
Category	Mood
Composer	My rating
Conductor	Parental rating
Content distributor	Period
Content provider genre	Play count
Content provider rating	Play count, afternoon totals
Copyright text	Play count, evening totals
Custom per-user field #1	Play count, morning totals
Custom per-user field #2	Play count, night totals
Data added	Play count, totals overall
Date encoded	Play count, totals weekday
Date played	Play count, totals weekend

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Date recorded	Primary media type
Date released	Provider
Duration Randomize	Protected content
File name	Playback order
File size (in KB)	Secondary media type
File type	Sort by
Genre	Subtitle
Key (example, A minor)	Title
Keywords	Writer

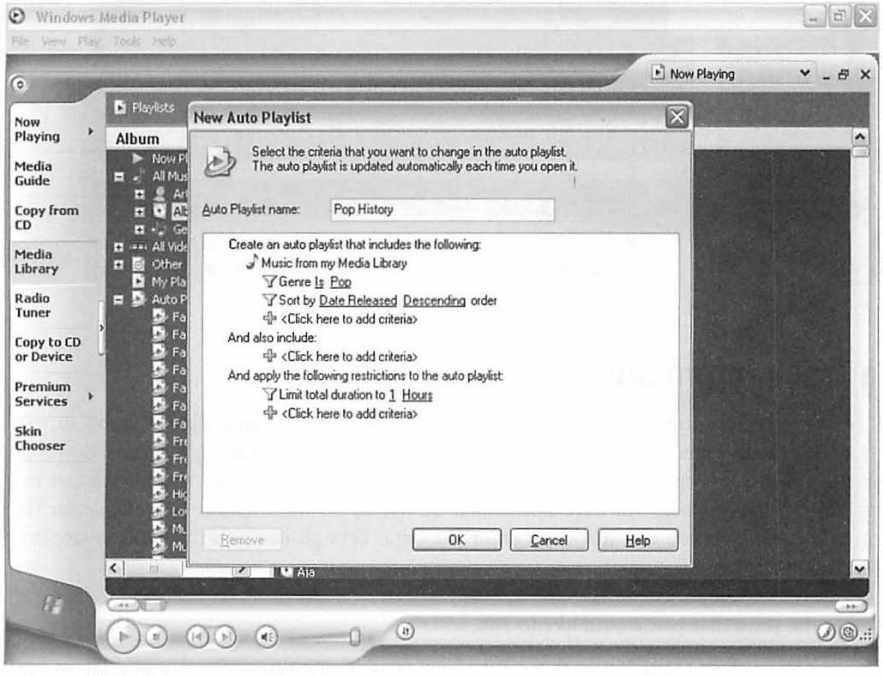


Figure 13-6: Defining an auto Playlist.

Once saved, this auto Playlist always shows the latest pop songs that have been added to the music library first and removes older pop songs as new ones are added. Once you have created an auto Playlist, an Edit Auto Playlist option is added to the Playlist menu from Windows Media Player. You can edit the criteria, such as making the duration longer or adding criteria to refine the searches.

As you build your own library of auto Playlists, you will become less dependent on the ones that came with Media Center. You can choose to delete any or all of the original auto Playlists, as shown in Figure 13-7. From Windows Media Player, in the Media Library view, just right-click on any of the auto Playlists to rename or delete them.

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Figure 13-7: Deleting auto Playlists.

Editing Track Information

There will be times when songs you know should be showing up in the auto Playlist don't appear. Most likely it has to do with a criterion that involves data about the track. If you have correctly copied the track using the option to obtain information about the track from the Internet, many of the "tags" that define a track will have been filled in. When no information is available, or the information is incomplete, you can manually enter the data. Let's go through the process step-by-step:

1. Locate the song that you would like to edit.
2. Right-click on the song to bring up the list of actions that you can perform, as shown in Figure 13-8. The pop-up menu includes options for Find Album Info and Advanced Tag Editor.
3. It is easier to find the track information from the Internet if possible (as opposed to filling it in yourself) so the best option, if you are connected to the Internet, is to choose Find Album Info.

   Windows Media Player searches for track information and returns the results. If there is more than one version of the song in release (such as versions of the same song released as singles, on different albums, or from other countries), you are prompted to select the correct version you copied the track from as shown in Figure 13-9. All of the information about the track is added to the music library and your auto Playlists will now be able to find the track.

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Figure 13-8: Select a song whose info you want to edit and right-click on it.



Figure 13-9: Select which version of the track you have in your music library.

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4. Sometimes, no track information is available or not all the information you want is present. For those times, you can manually edit the track tags. To do so, right-click on the track and choose Advanced Tag Editor. You see the menu shown in Figure 13-10.

   From the Advanced Tag Editor you can manually fill in any of the fields you choose. Figure 13-10 shows a track that actually was filled in by using the Find Album Info option first. As you can see, many important fields are blank.

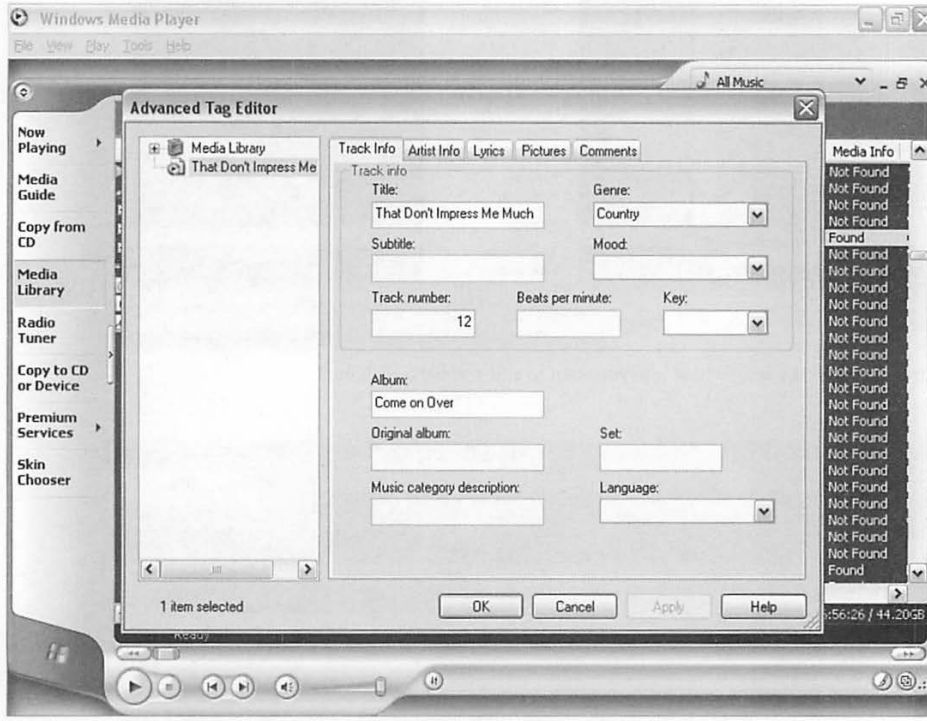


Figure 13-10: Advanced Tag Editor window.

5. It's a lot of work to enter the data, especially if you are doing so for all of the songs in an album. You can enter common information for a group of songs, such as an album. To do so, from the songs list, highlight all of the songs you want to edit at one time. You can start with the top song in the list, and, holding the Shift key down, select the last song to select the group. You can also select each song by holding the Ctrl key down as you do so to select the group.

6. Once you have selected the group of songs you want to edit, right-click on any of the songs and choose Advanced Tag Editor. The pop-up menu will now contain a list of the tracks you have selected and you can now edit each track or all of the tracks at once. In Figure 13-11, the genre is being changed to "Country" and will affect all of the tracks. This allows you to edit track information to any combination of tracks.

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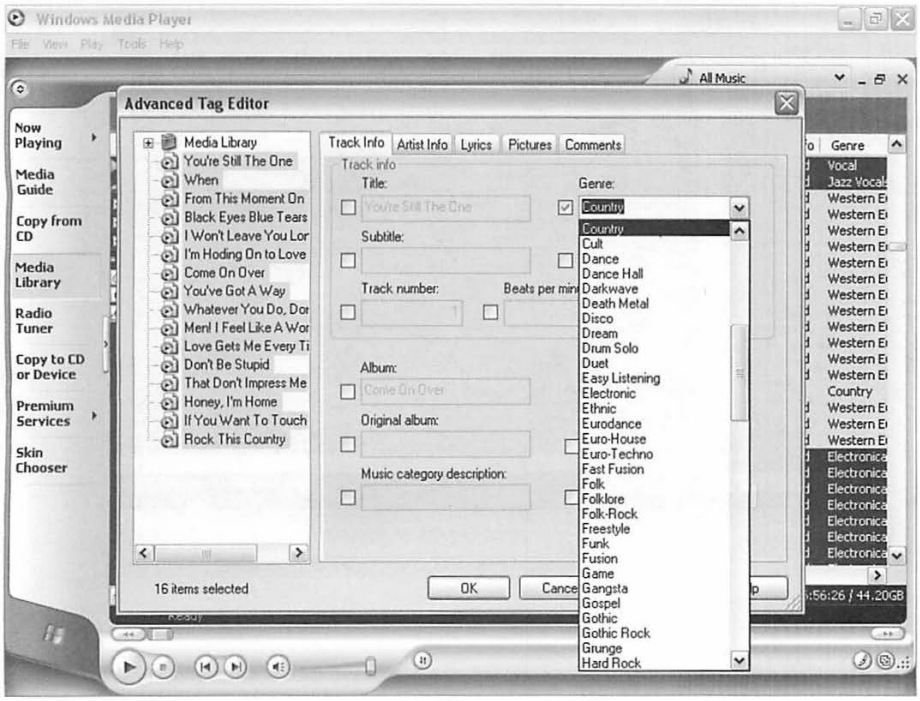


Figure 13-11: Changing data for a group of tracks at one time.

Creating Playlists in Windows Media Player

Auto Playlists are good for many lists, but there will be many times when you want to build a Playlist that doesn't change. Examples of static Playlists include a mix of favorite songs, an album, or just about any combination of songs that you create and want to listen to with that exact set of songs in that exact order. Termed "Playlists" in Media Center, they are quick and easy to create.

You can create Playlists in Windows Media Player from Windows XP and the Playlist will be accessible from My Music in Media Center. To do so, select Media Library in Windows Media Player and then choose Playlist ➪ New Playlist, as shown earlier in Figure 13-3.

The window that appears for creating a Playlist, shown in Figure 13-12, allows you to name the new Playlist, select the tracks you want to add from a menu, and keep track of how long the Playlist is in hours, minutes, and seconds.

You can find tracks by choosing a sort method from the left column. You can sort the tracks you want to find by artist, album, genre, and even from other Playlists and auto Playlists. As you find tracks, click on them to add them to the Playlist. At any time you can right-click on tracks in the Playlist to delete them from the Playlist or to change their order in the list. Figure 13-13 shows a completed Playlist selection.

You can create as many Playlists as you want and go back to Windows Media Player to edit them at any time. The Playlists you create in Windows Media Player will also be present in Media Center.

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Figure 13-12: Creating a new Playlist.



Figure 13-13: A completed Playlist.

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Playlists are a wonderful feature and a great way to play music in the order you want. The problem with Media Center is that you have to leave it to create a Playlist or auto Playlist. There is one solution—an add-on program called Playlist Editor.

Another method of creating a quick and simple Playlist is to use the Queue in My Music to assemble a Playlist. This enables you to pull music from all of your sources into a custom mix.

Creating Playlists in Media Center

My Music offers a quick and simple method for creating Playlists. Once you add music from any location to the Queue, you can save the music in that Queue as a Playlist.

Begin by selecting and playing music that you want to have in your Playlist. While viewing and listening to the music in the Queue, select Add to Queue as shown in Figure 13-14.

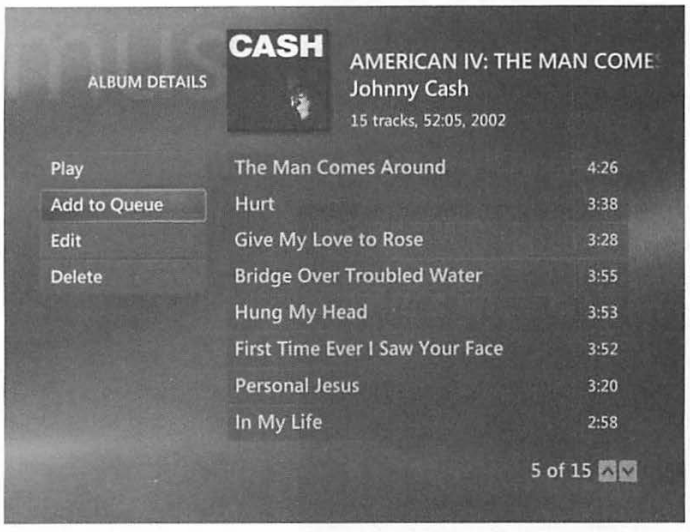


Figure 13-14: Start a Playlist by adding music to the Queue.

Once you've added music to the Queue, from any music view select to view the contents of the Queue. Click the Edit Queue button as shown in Figure 13-15.

Once you are in the Edit Queue menu, you can save the contents of the Queue as a Playlist or clear the Queue if you want. You can remove individual songs from the Queue by clicking the "X" box to the right of each song, or change their order by using the up and down arrows located to the right of each song, which will place the song higher or lower in the Queue. Once you have the contents of the Queue in the order you want, click Save as a Playlist as shown in Figure 13-16.

The next menu, as shown in Figure 13-17, enables you to name the Playlist you are about to save. If you are using a remote control, use the number buttons to enter the name of the song. The menu shows you which letters are reached with each number button when using a remote control for naming a

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Figure 13-15: Click the Edit Queue button.



Figure 13-16: Choose to Save as a Playlist.

Playlist. If you are using a mouse and a keyboard, simply enter the name by typing it on the keyboard. After naming the Playlist, click Save.

Once saved, your Playlist and all other Playlists created either in Media Center or Windows Media Player are available for play whenever you choose from the My Playlist menu, as shown in Figure 13-18.

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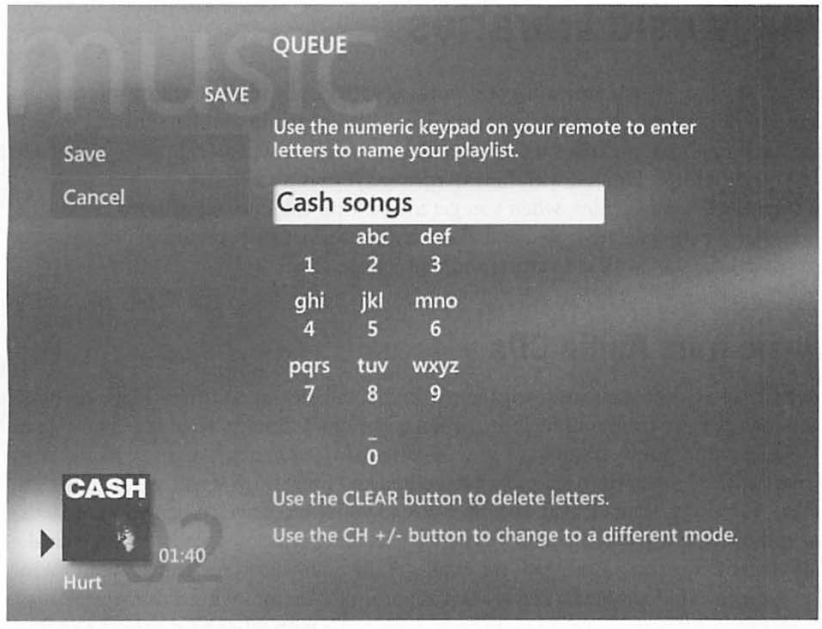


Figure 13-17: Naming the Playlist created from the Queue.

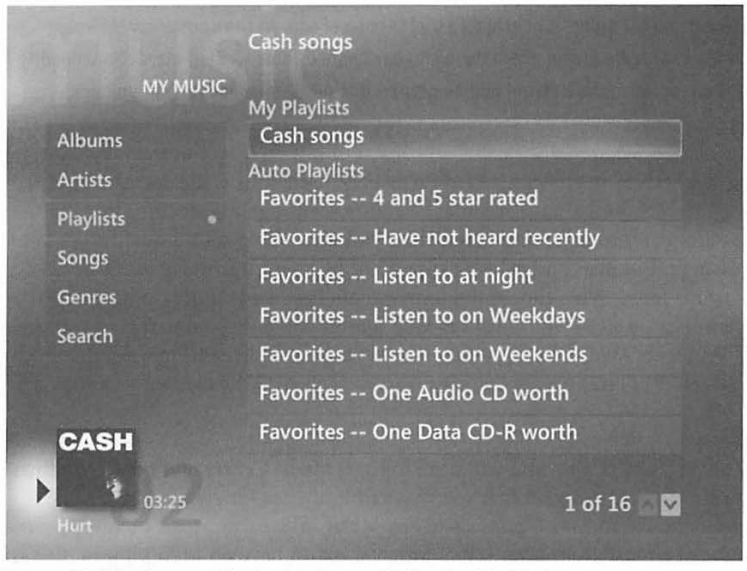


Figure 13-18: The new Playlist has been added to the My Playlist menu.

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Managing Music Libraries

One thing you learn pretty quickly when creating and working with Playlists is that getting information about songs is a big part of managing your music library. As detailed earlier in the chapter, each song in your media library has a "tag" that identifies much more than its name and file location. To effectively use Media Center, you should get familiar with how to manage your music library.

In addition to tagging your music files, when you get music form the Internet or from audio CDs you will want to manage where they are stored and also what file format and amount of compression you want them to have. Let's start with converting audio files from CDs.

Copying Music from Audio CDs

Rather than playing CDs—and constantly moving them in and out of the optical drive—it makes more sense to copy them to your hard drive and include them in your music library. Then you'll be able to add the tracks to Playlists and not worry about using the original CD when you want to hear a song from it. To make that happen, you need to choose what method and program you will use to copy CDs.

Media Center uses Windows Media Player to copy music to your hard drive. When you use Media Center to copy an audio CD, it will use any settings you have made in Windows Media Player to make copies. By default, Media Center only offers you the choice of saving music in the native WMA (Windows Media Audio) format. Windows Media Player also supports plug-ins for saving music as MP3 files, which may be a better choice if you want the files to be as compatible with other hardware as possible.

Note

If your computer did not come with an MP3 plug-in or at least a trial version of one, you can obtain an MP3 plug-in from the Tools menu of Windows Media Player. From the menu bar choose Tools ⇨ Plug-ins ⇨ Download Plug-ins. You will need to be connected to the Internet and be prepared to pay—they cost about ten bucks.

MP3 has a pretty big lead when it comes to being a widely used music file format. Portable music players, home DVD players, and a large number of computer programs all support MP3. As a compression format, it allows you to compress music files with acceptable sound quality. WMA is also excellent for compressing music files and is being supported by an ever-growing list of devices.

Based on how you use your music files, choose the format that's best for you. If you have an MP3 player, you'll probably want to copy all of your music as MP3 files. If you only plan to use your music in Media Center or with Windows Media Player, WMA will work great. The good news is that both Media Center and Windows Media Player play both formats, so you can use MP3 files without concern.

MAKING MP3 FILES

If you want to save your music as MP3 files, you will need to leave Media Center and go to Windows Media Player or any other third-party program that you may currently use for creating MP3 files.

In Window Media Player, choose Tools ⇨ Options ⇨ Copy Music. The Copy Music menu appears. Under Copy Settings, you can choose from a variety of formats. If you have an MP3 plug-in, this is where you select it for use in Media Center. The Copy Music menu is shown in Figure 13-19.

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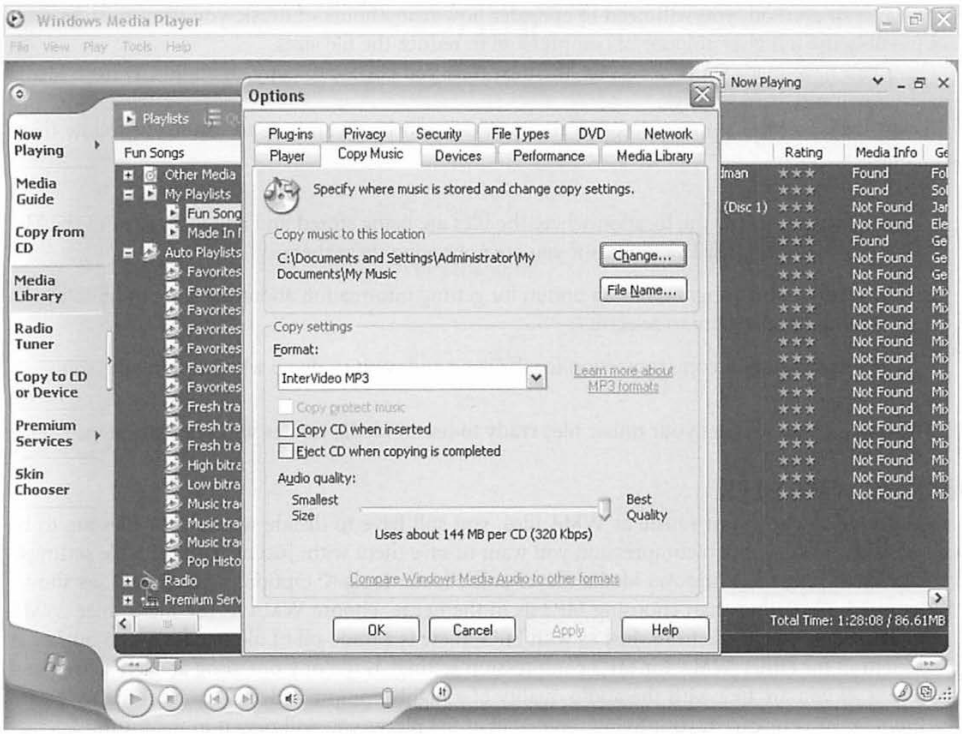


Figure 13-19: Selecting MP3 as the CD copy format.

In addition to choosing the MP3 file format, the Copy Music menu also allows you to decide which directory and folder to save files to. The default directory is the My Music folder in My Documents. This may not be the best place to store your music files if you have a lot of them, or if you have added a second or external hard drive for storing media files.

Note

If you choose to store your music files in any place other than the My Music folder in My Documents, be sure to create a shortcut to that location and place it in the My Music folder. Media Center will only look in My Music so the shortcut to your files is critical.

Once you choose the file location and to save your music as MP3s, you can also choose how much compression they are saved with. The rules are simple: smaller files compress the file more and reduce the quality of the sound. To keep the sound quality as good as possible, use the least compression possible. If you are storing your files for use only on your computer's hard drive, use the highest quality setting if you have enough space. If you plan to use your files on a portable device such as an

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MP3 player or an iPod, you will need to consider how many hours of music you want to store on it and possibly use a higher amount of compression to reduce the file sizes.

Once you have made these decisions, the next time you choose to copy an audio CD from Media Center, it will use these settings.

If you have an MP3 ripping program that you use and like, continue to use it but follow these guidelines:

- Be sure you know the location where the files are being stored and add a shortcut to the My Music folder in My Documents if you are not saving them there.
- If your ripping program has an option for getting information about the song to fill in media information, be sure to select it.
- If you can obtain copy protection for the song and want it, do so when ripping the song.

These guidelines will get your music files ready to use in Media Center without extra steps later.

MAKING WMA FILES

If you decide to copy your music as WMA files, you still have to decide where your files are to be located and also how much compression you want to save them with. Just as with MP3 file settings, to make changes go to Windows Media Player and choose Tools ➪ Options ➪ Copy CD, as shown in Figure 13-19. Rather than choosing MP3 as in the figure, choose WMA as the file format. WMA has three settings to choose from. Just as with MP3, there is a trade-off of file size for audio quality. A good method for either WMA for MP3 compression settings is to copy one song at each setting and listen to it. If you are fine with the audio quality of a highly compressed file, try listening to it with headphones, in your car, in your living room—all of the places you will play it in the future.

Note

Keep in mind that once you store a music file at high quality, you can save it again at some point at a lower quality. That is not true in reverse—you can't copy from a low-quality setting to a higher quality setting and regain any quality, so be sure you are comfortable with your settings.

Here are the three WMA formats:

- **Windows Media Audio:** Tracks are copied at one constant compression rate. You can choose the quality level using the slider bar in the Copy Audio menu.
- **Windows Media Audio Variable Bit Rate Mode:** Tracks are copied using a variety of compression rates within a track, adding as much compression as possible when needed to create the best quality audio with the smallest file size.
- **Windows Media Audio Lossless Mode:** Tracks are saved at essentially the same quality as the CD they came on.

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After you choose your compression rate and file location, Media Center uses these settings each time you copy an audio CD.

Music Files that Work with Media Center

If you have been ripping your CDs and purchasing or downloading music online for awhile, you probably have a large music library that you will want to use in Media Center. Even though WMA and MP3 are the primary methods for copying music into Media Center, it does support most common audio formats.

Table 13-3 lists audio files that are supported by Media Center, along with their file extensions to help you identify your files.

Table 13-3 Supported Music File Formats

Format	*Extension(s)*
CD audio	.cda
Windows Media audio files	.asf, .asx, .wax, .wm, .wma, and .wmd
Windows audio files	.wmp, .wmx, .wvx, and .wav
MP3	.mp3 and .m3u

If by some chance you have music in a format that is not supported, you can use a file conversion utility to convert the files to one of the preceding formats.

When working with existing files, they may not have media information attached to them. Windows Media Player attempts to find media information about your files as they are used. This requires a connection to the Internet. If you don't want to add tags to your existing files or you don't have a connection to the Internet that you want to use for this purpose, go to Window Media Player and choose Tools ➪ Options ➪ Media Library. Uncheck the box for automatic music information updates as shown in Figure 13-20.

Music You've Bought Online

Online music purchases add an additional layer of complexity—licenses.

When you purchase music from most online music services, they are actually selling you a license to play the file that is downloaded on your computer with a specific number of copies to a CD. For this reason, most online stores require either their own "application" to download music or that you have Windows Media Player manage the license.

The applications that you must use with music services such as Napster, iTunes, Rhapsody, and other services largely manage the licenses to the music you purchase and they control digital copying. These applications are pretty good at copy protection. If you try to copy a song to a format to get around the copy protection, they won't let you do it.

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Figure 13-20: Controlling automatic music information updates.

The good news is that the licenses are pretty fair. You can usually play the music for as long as you want on your own computer and then make a limited number of CD burns with it.

When you purchase music from such sources, they issue a license for it and that license contains restrictions on how it can be used. Windows Media Player looks for the licenses when playing music. If a song requires a license and you don't have one, neither Windows Media Player nor Media Center will play the song.

Tip

Copy protection of downloaded music probably won't go away. It is best to secure a legal license to downloaded music if you want to play it in Media Center.

To change your copy protection setting in Media Center and Windows Media Player, choose Tools ➪ Options and then select the Privacy tab. Select Acquire Licenses Automatically for Protected Content. This allows you to play most music you've downloaded in Media Center.

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Summary

Auto Playlists and regular Playlists enable you to create custom mixes of your favorite music. Using Windows Media Player you can create either Playlist type and use those Playlists in Media Center. Auto Playlists update lists based on a set of rules, and regular Playlists are a fixed set of songs selected from the media library.

In order to create Playlists, you need to have your music stored as files on your PC's hard drive in any of the file formats supported by Media Center. By copying CDs, downloading music, or using existing music files on your computer, you will build a media library. The library, or a shortcut to it, must be located in the My Music folder in the My Documents folder for Media Center to find the music files.

To effectively build Playlists and manage your music library, you need to gather media information such as album name, song name, artist, and other information about the music. You can do this by obtaining it from the Internet or by manually entering track information. For music that is purchased online, you will need to obtain a license to play it on your computer and be sure that Windows Media Player is set to obtain music licenses.

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Chapter 14

Listening to Broadcast and Internet Radio



If you've ever listened to an FM radio station and heard a song you like or a comment from someone, you probably wished you could hear it again. If you were listening to FM radio on your Media Center PC, you could. Media Center can pause and rewind live radio broadcasts. How cool is that? If your Media Center PC is equipped with an FM tuner you will love listening to the radio. In the same way that Media Center makes watching TV and listening to music a whole new experience, it works that same magic for a totally unexpected experience with radio.

This chapter looks at how to listen to FM radio, and also Internet radio stations if you are connected to the Internet.

Tuning to FM Broadcasts

As the heart of your home entertainment center, if you have an FM radio tuner in your Media Center PC, then you have the ability to play FM radio broadcasts—just like your home stereo.

Radio is only present in Media Center if your computer has an FM tuner as part of the TV tuner card that came with your PC, or when you subscribe to an Internet radio service such as Live 365 from Online Spotlight as featured in Chapter 19. When an FM tuner is present or if you subscribe to an Internet radio service, Media Center adds "Radio" as one of the menu items on the Start Screen. If your computer does not have an FM tuner, or you have not subscribed to an Internet radio service, the Radio button will not be present on the Start Screen.

Note

If you don't have an FM tuner you can upgrade your TV tuner card to one that includes FM radio tuning. This requires removing your old TV tuner card and installing a new one with FM tuning. Windows XP will recognize the new hardware and update your system files. The next time you start Media Center, a Radio button will be present on the Start Screen.

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Connecting an Antenna for FM Reception

Your TV/FM tuner card has two antenna connections: one for connecting your TV antenna or cable from a set-top box, and another for an FM antenna. They will both be coaxial connectors as shown in Figure 14-1.

Note

Without an antenna, you will not be able to tune to FM broadcasts. Some really powerful local stations may be strong enough to be picked up by the connector on the card, but you will not be able to get all of your local stations without one.

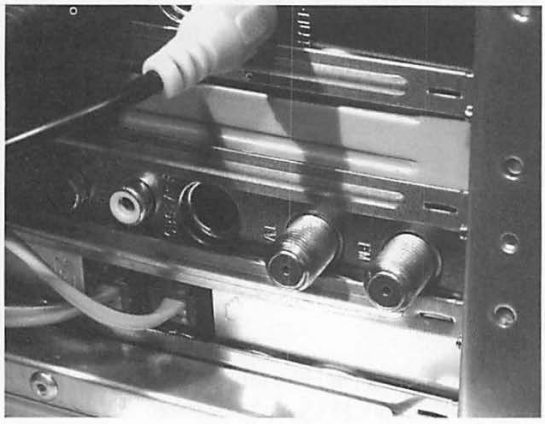


Figure 14-1: FM antenna connector on the TV/FM tuner card.

Getting the right type of FM antenna is important. If you have a radio or home stereo you may be using a simple single-wire or dual-wire antenna that just hangs off the back of your stereo or radio. Wire antennas attach to the stereo or radio using screw connectors on the back of the set. It is possible to use such an antenna, but you will need an adapter that allows you to connect the wires to a coaxial connector. Such converters are available at electronic stores such as Radio Shack.

A better solution is to get a good FM radio antenna. They come in two varieties: amplified or passive. The amplified version boosts the FM signals if you live in a building or an area where radio reception is not good. The passive version does not boost the signal and is good if you live in an area without reception problems. Because the passive versions are inexpensive (around $10) versus the more expensive amplified versions ($30–$40), you may want to try a passive antenna first.

Tip

Another solution for getting FM reception is to use an inexpensive set of "rabbit ears." A low-cost TV antenna will also allow you to pick up most radio stations in your area.

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Regardless of which antenna you use, be sure that it has a coaxial connector to allow it to connect to the TV/FM tuner card. Figure 14-2 shows a passive FM antenna from Radio Shack that does a great job in most areas and is available for under $20 in many electronic stores.

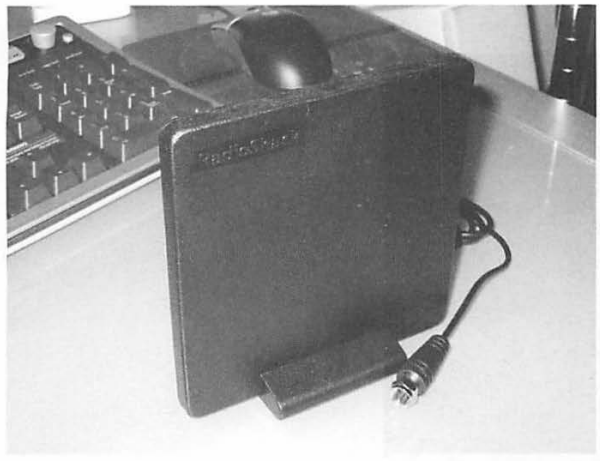


Figure 14-2: A passive FM antenna from Radio Shack with coaxial connector.

Connect your FM antenna, and once you start listening to FM radio on your Media Center PC, be sure to play with its position in the room. Moving the antenna to various locations sometimes improves reception. If your reception is poor with a set of rabbit ears or a passive FM antenna, try an amplified FM antenna.

The Radio Menu

With an FM antenna attached, you are ready to listen to FM radio using Media Center. From the Start Screen, you should have Radio on the menu, as shown in Figure 14-3. If you don't have Radio, it means that you do not have an FM tuner as a part of your TV tuner card.

After clicking the Radio button, you are brought to the Radio menu as shown in Figure 14-4. Since it is your first visit to Radio, the screen does not contain any radio station presets, and has the following items on the menu:

- **Internet:** This button takes you to Internet radio stations if your computer has an active connection to the Internet.
- **Start FM:** To begin playing FM radio stations, press this button to activate the FM tuner.
- **Station:** This is where you can enter a station, or see what station is currently tuned in.
- **Save button:** Saves current station to a radio station preset.
- **Seek buttons:** Clicking these finds the next strong station.

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- **Tune buttons:** Clicking these moves to the next higher or lower station regardless of signal strength.
- **1-9 preset buttons:** Once you have added presets, buttons 1 through 9 allow you to tune directly to the present stations.

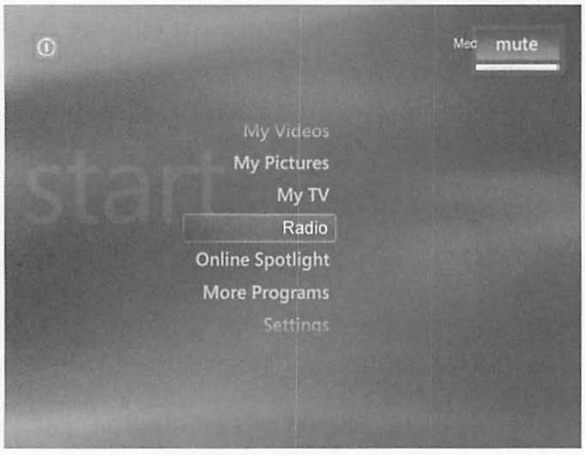


Figure 14-3: Radio on the Start Screen.

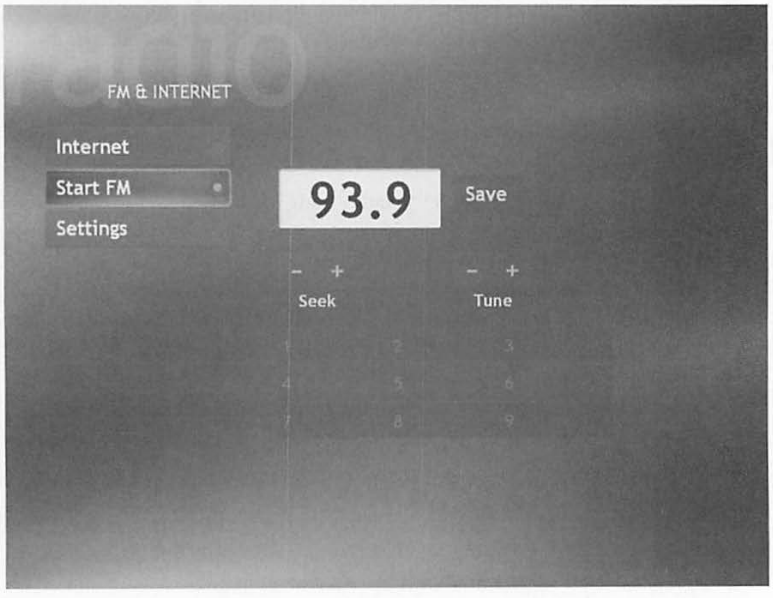


Figure 14-4: The Radio menu.

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A good way to get started is to manually enter the number for a favorite radio station in your area. Even if you enter a number, nothing happens until you click the Start FM button. This starts the FM tuner and tunes to the station you entered.

Note

Are you entering stations or clicking on presets and not hearing anything? Be sure to click Start FM to fire up the FM tuner.

You can use any of the standard methods for number entry used everywhere in Media Center to enter station numbers—number buttons on the remote control or the number keys on your keyboard. If your antenna is a good one, you should hear your radio station. If you hear the station and there is static, try moving your antenna to a different location.

If your station still has static, before running out to purchase a better antenna, try tuning to other stations to make sure the problem really is with the antenna. Using the seek buttons, tune to other radio stations and see how the reception is and also how many stations come in clearly. If you get lots of clear stations, your antenna is doing the job. If very few stations come in, you may need a better antenna.

Creating Presets

As you tune up and down using manual entry, seek, or tune buttons, you will find stations that you will want to listen to in the future. Just as with most car and home radios, Media Center enables you to store your favorite stations as presets for easy station selection.

To create a preset, simply tune to a station, and once you have it tuned in, click the Save button. It saves the station as a preset in the next available preset slot. Nine station presets are available. Figure 14-5 shows the Radio menu with a full set of presets.

You can change, delete, or alter the order of radio presets by going to the Radio Settings menu. Each of the presets can be edited or deleted. Using the up and down arrows, you can change the order of the presets. Clicking the "X" button removes the preset station from that location. If you are using your remote control for this function, use the arrow buttons to move up and down within the list of presets and then use the Up or Down buttons to move the preset within the list. To delete a preset, use the Delete button on the remote control.

The Autosort button reorders the list in ascending or descending order. Each time you click the button it changes from ascending to descending or descending to ascending.

Clicking Save saves the order and set of presets as shown on the Radio Settings menu. If you click Cancel, it exits the Radio Settings menu without changing the presets. (See Figure 14-6.)

Navigating Live Radio

Once you have your stations tuned and presets selected, you can begin listening to FM radio. Moving to presets is really easy. Table 14-1 shows the quickest ways to move to presets using each input method.

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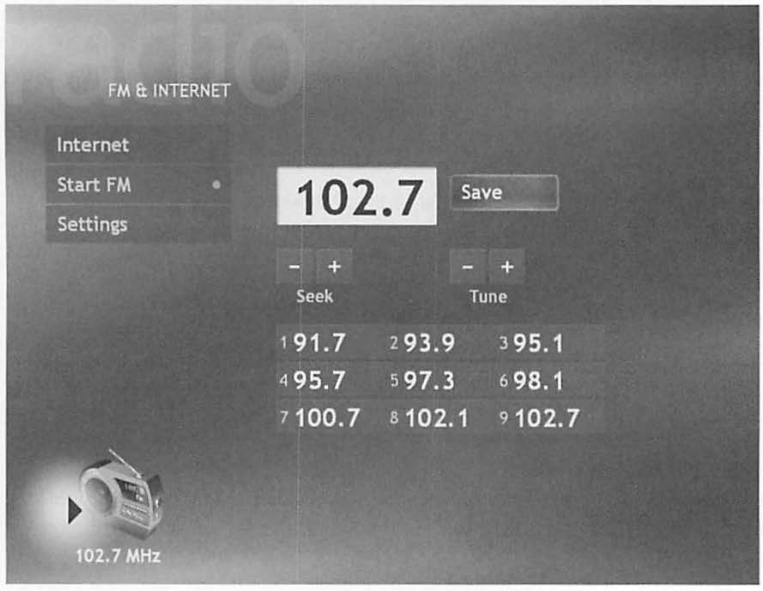


Figure 14-5: Radio stations have been added as presets.

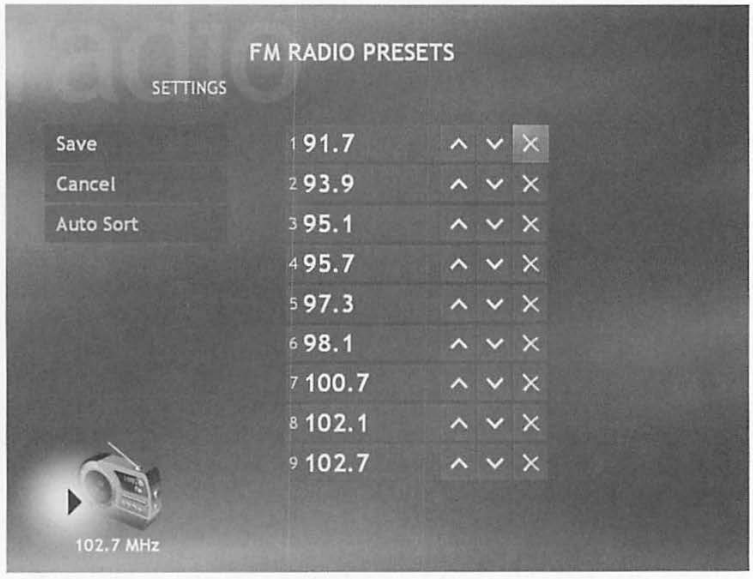


Figure 14-6: The Radio Settings menu.

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Table 14-1 Keyboard, Mouse, and Remote Control Actions

Action	*Keyboard*	*Mouse*	*Remote Control*
Volume	Volume dial if available	Volume up or down from on-screen controls	Volume up or down buttons
Mute	Mute key if available	Mute icon from on-screen controls	Mute button
Entering a station	Use number keys	N/A	Number buttons
Selecting Preset	Use number keys	Click on preset	Use number buttons
Seek	Right or Left Arrow keys and then press Enter to stay on a station	Click on + or – button	Right or Left Arrow buttons and then press OK to stay on a station
Tune	Right or Left Arrow keys and then press Enter to stay on a station	Click on + or – button	Right or Left Arrow buttons and then press OK to stay on a station

Pausing and Replaying Live Radio

One thing that Media Center does that no regular radio can do is pause a live radio broadcast for up to 30 minutes and replay up to 30 minutes of the broadcast.

Using the same personal recording features found in My TV—you can think of Radio the same way you do when you watch TV in My TV—you are in control. Now you can replay a favorite song, go back and get an important phone number you heard in a commercial, and walk away without missing anything in a talk show by using the pause feature. How many times have you a heard a song and wanted to know the name and performer and missed the announcer saying who it was? Just rewind to find out if it was mentioned.

Note

Although Radio has the same rewind and pause features as in My TV, it does not have a record feature. That is, you can't record radio broadcasts like TV programs.

If you have mastered navigating TV pausing and rewinding, you will know how to do the same actions in Radio. Here are the methods to control pausing and rewinding:

- **Pausing Live Radio:** Press the Pause button on the remote control or use your mouse to click the Pause button on the on-screen controls. If your keyboard has transport keys, press the Pause button.
- **Rewinding Live Radio:** Press the Replay button on the remote control to move backwards in a radio broadcast in seven-second increments up to 30 minutes. You can move forward in

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seven-second increments by pressing the Skip button. You can use the mouse to use the on-screen controls to replay and skip, and if your keyboard had transport keys you can use the Previous and Next buttons. To return to the live broadcast, skip forward until the broadcast returns to real time. An on-screen time bar appears to show where you are in the program, as shown in Figure 14-7.

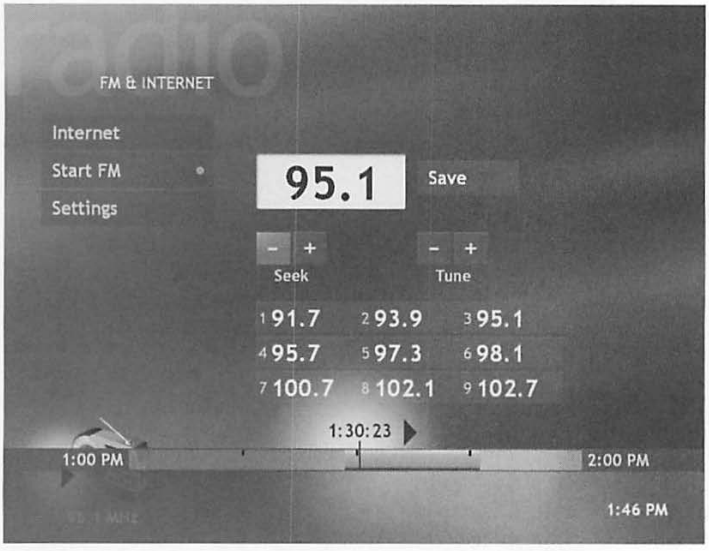


Figure 14-7: The on-screen time bar appears when replaying or pausing radio.

Tuning to Internet Radio

If you have a radio tuner card and you have access to the Internet, you can also listen to Internet radio stations from the Radio button.

One quirk in Media Center is that to add Internet radio stations, you have to leave Radio and go to Online Spotlight. The Internet button appears in Radio only if one or more Internet radio Web links have been installed from Online Spotlight. So, the first step to listening to radio stations from the Internet is to go to Online Spotlight.

Cross-Reference

Chapter 19 explores Online Spotlight in full detail.

Go to the Start Screen and scroll to Online Spotlight and select it. If you are not actively connected to the Internet, you will see a pop-up box that tells you that to use Online Spotlight you must first connect to the Internet. If you have broadband service, be sure that you are connected. If you use

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dial-up, leave Media Center to make the connection. Once you are connected, you will see the Online Spotlight menu shown in Figure 14-8.



Figure 14-8: The Online Spotlight menu.

Online Spotlight is an area of Media Center where you can use online services or get information and make purchases from the Internet. Primarily, it is the conduit to the online world for Media Center since Media Center does not feature a Web browser.

One of the regularly featured sites in Online Spotlight is Live 365. It is a portal of Internet radio stations that can be browsed by genre and various categories. Figure 14-9 shows the Live 356 Genres menu. By selecting a genre, you will find a number of stations available from the Internet featuring that type of programming. Figure 14-10 shows the listing of all broadcasts by selecting All Stations from the Genre menu.

Click on any station that is of interest to you. You will arrive at the station and it will begin playing after a short pause while Media Center connects to the station. Unlike FM radio stations, you will be able to see the name of the song playing and even what songs are coming next. As shown in Figure 14-11, when you are playing a station in Live 365, there will be a button on the bottom of the screen labeled Add to My Radio. When you click this button, it adds the station you are listening to the Internet radio presets in Radio. Figure 14-12 shows Internet radio stations that were added to the Internet radio presets using this method from Live 365.

Now, to listen to the stations you selected, you can access them directly from Radio without having to visit Online Spotlight. If you want to add more Internet radio stations, you will need to visit

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Online Spotlight to do so. Since they are Internet stations, you will need to be connected to the Internet.

When you choose an Internet radio station, you will jump out of Radio and go to the user interface of the actual station. Currently, Napster Radio and Live 365 are the sources for Internet radio stations in Media Center and their user interfaces comply with the look and navigation used throughout Media Center.

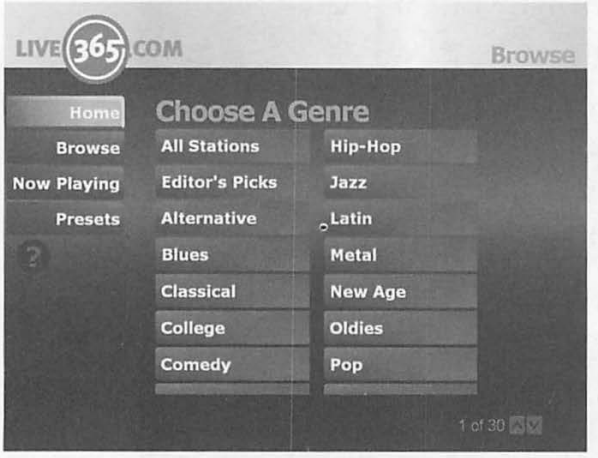


Figure 14-9: The Live 365 Genres menu.



Figure 14-10: The Live 365 All Broadcasts menu.

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Figure 14-11: Listening to an Internet radio station in Live 365.

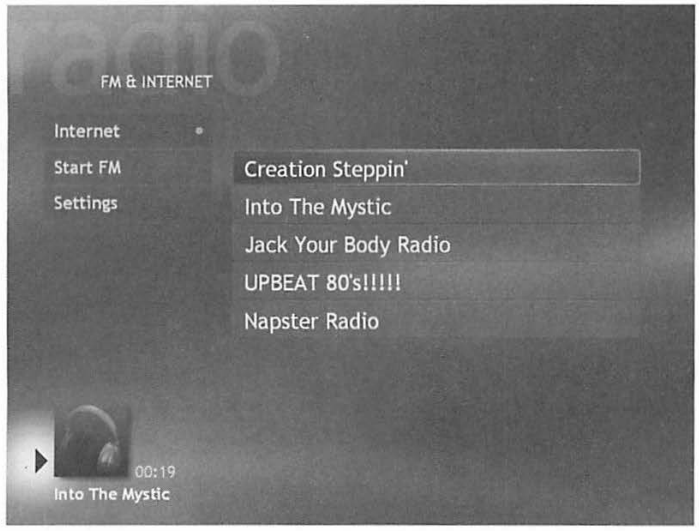


Figure 14-12: Internet radio presets created from listening to them in Live 365.

Note

One final note on Internet radio listening: Regardless of the speed of your Internet connection, you may find that there are pauses and glitches. Streaming media combined with general processing and e-mail connections on your Media Center PC may cause a few hiccups when listening to Internet radio. A good way to avoid this is to close programs that are not in use while listening to Internet radio.

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Summary

If your Media Center PC came equipped with an FM tuner on the TV tuner card, you can listen to FM radio broadcasts in Media Center. If you have an FM tuner and you have an active connection to the Internet, you can also add Internet radio station presets and listen to high-quality streaming audio from Internet radio broadcasts.

You can pause and replay up to 30 minutes of live radio in Media Center just as you can with TV. Although you can pause and replay radio, you can *not* record radio the way you can record TV programs.

To have a positive radio listening experience and to get as many local radio stations as possible, you will need to connect a good FM radio antenna to your FM tuner. For Internet radio broadcasts, you will need a reliable connection to the Internet.

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Part V

Viewing Photos and Home Videos

Chapter 15
Viewing and Managing Digital Picture Libraries

Chapter 16
Creating Slideshows Using My Pictures

Chapter 17
Playing Home Movies with My Video

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Chapter 15

Viewing and Managing Digital Picture Libraries



Most digital cameras can connect to a TV set to display pictures on it. Doing this requires a special cable and, like any "extra step," most people don't spend the time to set up their TV as their picture viewer. In the mid-1990s Eastman Kodak came out with the Photo CD. You could have a Photo CD made when you developed your film and then to copied to disc; the trick was that you needed a Photo CD player. It never caught on. Recently, most all DVD players include the ability to play JPEG files stored on a CD-ROM or DVD-R disc. However, this feature is not the main reason people purchase DVD players.

Anything that requires a special process, extra efforts, or special devices seldom gains popularity. Most digital photos are stored on a computer. It's the logical place to store them once the memory card in your digital camera gets full. Your computer you can perform image editing, you can e-mail pictures, or make prints from them and play slideshows.

Computer-based slideshows have been pretty basic. They show one picture after another, sometimes with a nice transition. Windows XP has a slideshow screen saver that is very popular. It's easy to use and comes with the operating system.

A computer is the best place to store, edit, and print pictures, but not always the best for slideshows. It's hard for a group of people to sit comfortably around the computer monitor to watch a slideshow. Media Center changes all of that. Connected to a TV, digital photo libraries are one of the nicest TV experiences when teamed with My Pictures in Media Center. Looking more like a video than a slideshow, pictures move, living things are displayed with stunning quality, and you even have the ability to mix in music.

This chapter takes a look at how to get all of your digital photos together for use in My Pictures. Chapter 16 takes a look at making slideshows once you get comfortable working with pictures in Media Center.

Tip

Don't have a digital camera but have tons of prints, slides, and negatives? Most photo processing labs offer a service to convert your hard copy photos to digital files on a CD-ROM. You can also buy scanners to digitize prints for increasingly affordable prices.

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Building a Digital Photo Library

If you aren't familiar with digital photos, this section will serve as a quick primer. If you have a digital camera, you can probably skip this section of the chapter and move to the "Managing Your Digital Photo Library" section later in the chapter.

The gist of this section is that the only way you can use photos in Media Center is to get them into a digital file format. There are a number of ways to get existing prints, slides, and negatives converted. You can do it yourself by using a scanner or send them to a photo service that will do it for you. Let's take a look at what you will need in the way of files in either process.

Scanning Pictures Yourself

Most people can do a great job scanning prints on their own, and scanners are easy to use and inexpensive. Slides and negatives are a bit trickier and require more expensive scanners, but it is still possible to convert those on your own if you are willing to invest the time and money.

For scanning prints, you should look for a scanner with the following features:

- Flatbed scanner with at least 1200 dpi resolution.
- An easy-to-open lid, and preferably one that can be removed for pictures in books and albums.
- A USB connection to your PC.
- A scanning area of at least letter size and preferably legal size.
- Scanning software that allows repetitive scanning of the same size pictures, often referred to as *multi-photo mode*.
- Depending on your needs, you may need a slide or negative scanning attachment.

You can generally get such a scanner for around $100 or less. Scanners that cost more are good for graphic arts and professional use, but for home applications such as TV viewing and sending e-mails containing your photos, a low-cost scanner will serve you just fine. In the $100 to $150 range you should expect an attachment for scanning slides and negatives.

Once you have attached your scanner to your computer, you can begin converting your pictures. Here are some simple settings that will ensure that your pictures work well in Media Center, and for most of the uses you will have for them in general:

- **File Format:** Save your pictures as JPEG files. Use the highest quality setting for JPEG.
- **File Size:** A good file size for 4″ × 6″ prints is 1200 × 800 pixels. Pictures scanned and stored at this size will display well on your TV or computer monitor and will be able to capture most all of the information that was on the print. Often you are required to set the dpi, or dots per inch for the scan. If you can, use 180 dpi, which should get you close to the 1200 × 800 size image from a 4″ × 6″ print.
- **Number of Colors:** Use the "millions" of colors settings. Other terms to look for are 24- or 32-bit color depth or 16.7 million colors.

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Using these settings you can quickly build a digital photo library from your existing shoeboxes full of photos.

Using a Photo Service to Scan Your Pictures

For existing prints, slides, or negatives, you should check with your local photo processing service (including those at drug stores and supermarkets) to see if they offer a service for converting your hard-copy photos to digital files on a CD-ROM. If they don't, you can find a number of photo services online that can do them for you.

If you find such a service, they will take your prints, slides, and negatives and scan them for you. It's a labor-intensive process that's often done by hand, so it can get expensive. The service will typically deliver the digital photo files on a CD-ROM (usually as JPEGs) and return your originals to you.

Many drug stores, supermarkets, and retailers such as Wal-Mart and others have in-store scanning stations where you do the work of making the scans and they put them onto a CD-ROM for you. This is sometimes expensive, so always check around for a reasonable price.

Note

The price for getting your photos to disc is fairly high when you use a service—usually at least 25 cents per photo and sometimes more. For a large collection of photos, you can easily exceed the cost of buying your own scanner.

Getting New Pictures in Hard Copy and Digital Format

If you are using a "film camera" and are bringing your film in for developing, the news is much better. Most photo services offer the option to deliver a CD-ROM containing digital versions of your photos along with your prints for as little as $3 extra per roll of film. This is a good deal and the quality of the digital photos is usually very good.

The files that are delivered will most likely be JPEGs stored as files at least 800 × 600 pixels, most often 1200 × 800.

If you are a digital camera user, you are way ahead in having your pictures ready to use in Media Center; the photos are already digital so there's no conversion necessary. Hopefully you have been moving your files from your camera's storage card to your PC. If you haven't, do so. It's the best, most economical place for them.

Managing Your Digital Photo Library

Once you have your pictures in JPEG format from scanning them yourself or having your photo retailer do it for you, you are ready to move them to your Media Center PC. Regardless of how you get your pictures into your PC (scanned from prints, slides, or negatives or from a digital camera), you will need to organize them a bit to effectively use them in general, and slideshows in particular. Folder

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names, file names, and file dates will all play a role in using your photos in Media Center, so it is good to manage your photo library with that in mind.

File and Folder Names

Most digital photos have names that do not actually describe the photo—unless you have done the hard work of going in and renaming all of your picture files manually. Most people don't do that. Rather, they organize the picture files in folders that describe the photos inside of it, such as "Mom's Birthday 2002" or "Graduation Day."

That works pretty well because the photo files from a digital camera, for example, have unintuitive names such as `IMG00023.jpg`. When you get a large folder full of files named that way it's hard to know what the pictures are. Figure 15-1 shows a typical file folder full of pictures from a digital camera. Can you tell which photo you want to view?



Figure 15-1: Digital camera file names are not descriptive.

When you scan your own photos, you probably will take the effort to name the files, and that is a real plus. It's okay if you don't do it and use whatever name the scanning software assigns them. Again, the important thing is to store concentrated groups of photos from one occasion in a folder

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whose name describes the photos well. Don't be afraid to use dates in the folder name—it really helps organize your photo library.

File Dates

Whether from a digital camera or pictures you scanned and saved as a file, each file has a name and a creation date. You will learn that photo files can be sorted by their date. That can be good for digital camera files since it means the date the picture was taken, but it doesn't work that way for pictures you got a from a photo service or scanned yourself. In those cases the file date will be for the day the picture was scanned and that may be way off of the date the picture was taken.

In addition to the file name and creation date, Windows XP also keeps track of when the photo was last modified (any actions such as moving the file or editing it) and the last date accessed. Figure 15-2 shows file information for a picture file from a digital camera. You right-click on the file and choose Properties to see this information.



Figure 15-2: File name, creation, modification, and access dates for a digital picture.

As you can see, the date created is important for identifying a picture. If you have not set the clock and calendar on your digital camera, you will have a hard time organizing and sorting your photos by creation date.

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When you scan your own photos or have a service do it for you, you will not be able to modify the creation date, so naming the folder they are in with a date is your best way of organizing them by date.

Finding Picture Files

Once you have moved as many of your digital photo files to your PC as possible, name your folders and organize your folders in a way that makes each picture easy to find and identify. You can store the folders anywhere on your computer, and Media Center will take you through the same process of finding media folders as with My Music where you identify the locations of folders that contain pictures.

To add picture folders to My Pictures, go to the Start Screen, select My Pictures, and from the My Pictures menu click the Find Pictures button. From the next menu, Add or Remove Folders, choose to Add folders. Next, decide if you will only be adding folders from the Media Center PC you are working on or from shared folders from another computer. After making that selection and clicking Next, you arrive at the Picture Discovery menu, as shown in Figure 15-3.

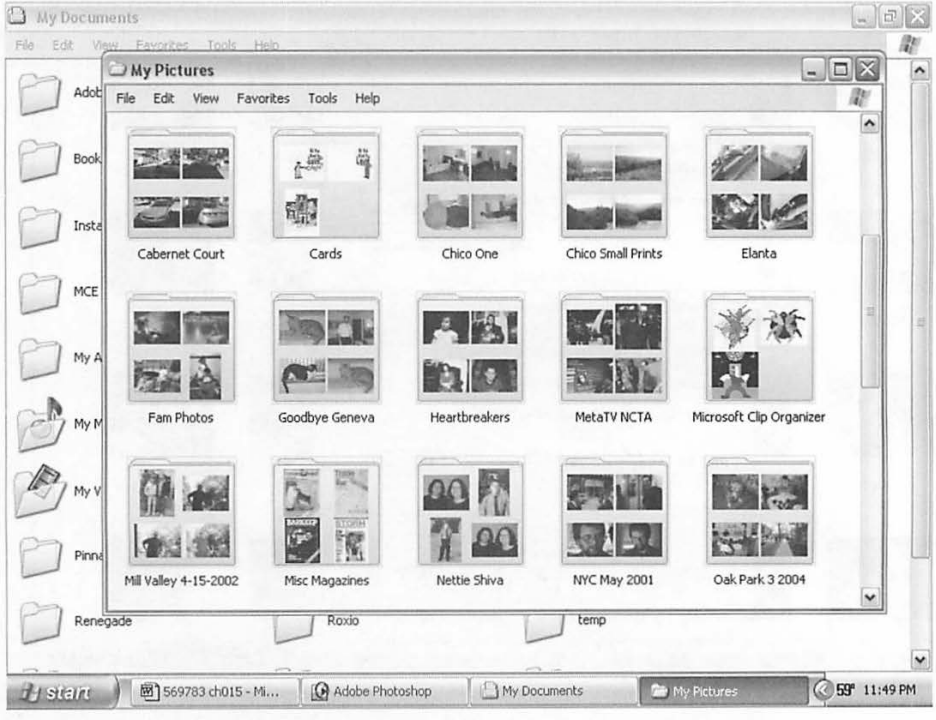


Figure 15-3: Select the folders that contain picture folders from the Picture Discovery menu.

It is important to note that because the folder selection routine looks at all hard drives, CD and DVD drives, plus attached media drives (such as a compact flash or SD card reader), you can add

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folders from your digital camera or disk full of pictures such as a Picture Disk. These must be present in your computer for the pictures to be viewed.

Put a check mark next to the drives, folders, or devices where your pictures are located and select Next. A confirmation screen will list the folder locations. If you missed any, click the Back button and make changes. If everything looks right, click Finish. You folders will be added to My Pictures and each time you enter it will scan the folders for any additions or deletions of files. You can go back to the Find Pictures menu at any time to add or remove folders.

Files from Your Digital Camera

Media Center can view photo files that are stored on digital media such as Compact Flash and Secure Media cards. The problem with having photos on memory cards is one of convenience—you must get up and put the card in the computer each time you want to view them. The same is true for photos stored on a CD-ROM. They are safe there, but you won't view them as often if you have to remember to put in the disc and remember which discs hold which pictures!

You can move files from your digital camera from within Media Center by simply attaching your digital camera to your PC with its supplied USB cable. When connected, Media Center will recognize the camera and present it as a folder in the My Pictures menu just like any other folder. When you open the folder, you can copy the files from the camera into your My Pictures or Shared Pictures folders and even delete them from the camera if you choose.

Media Center can display just about any file created with just about any digital camera. At this point, it's important to plan how you want to view your digital camera files—all at once or once in a while from a memory card or CD-ROM.

At this point you are ready to start viewing your pictures.

Viewing Photos in My Pictures

With your expertly organized photo files, you are now ready to view them from Media Center. If there is a photo file or shortcut to it in your My Pictures folder, Media Center will be able to display it.

From the Media Center Start Screen, choose My Pictures. You will see the main My Pictures menu, as shown in Figure 15-4.

Using the same user interface as in all of the other parts of Media Center, My Pictures is highly visual while giving you plenty of tools to find and manage your photo library. The right section of the screen contains visual representations of each of the folders containing picture files from the folders you added. If you have used the Thumbnail view of folders in Windows XP, you will be familiar with this method of helping you "see into" folders. Individual files located in the My Pictures folder will be identified as single icon previews of the picture.

Let's take a look at all of the elements on the main My Pictures menu:

- **Thumbnails:** Visual previews of photo folders and files you can view.
- **Play slide show button:** Plays a slideshow of the folders.
- **Sort by name/date buttons:** Sorts the folders by their name or creation date.
- **Create CD/DVD button:** Allows you to copy your pictures to a CD or DVD.

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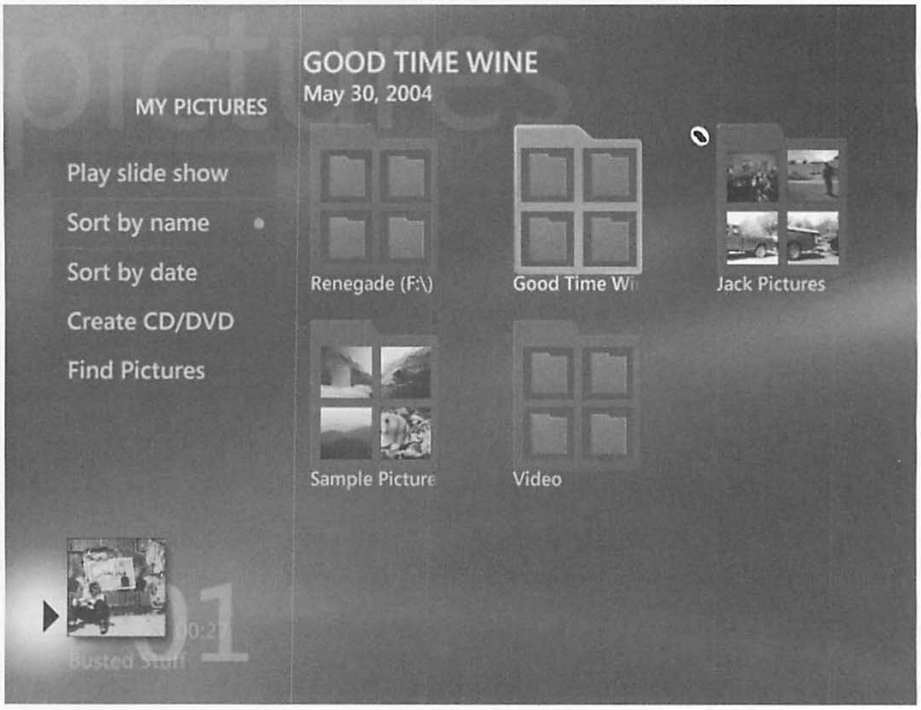


Figure 15-4: The My Pictures menu.

- **Find Pictures button:** Takes you to the menu to add or delete folders with pictures.
- **Now Playing icon:** If you were playing music, video, TV, or a DVD when you entered My Pictures, it will continue to play in the Now Playing window on the bottom left corner of the screen.

Cross-Reference

Chapter 16 explores creating slideshows in greater detail.

My Pictures can display most digital picture file formats. Table 15-1 gives you a list of the digital picture files that are supported.

Table 15-1 Supported File Types

File Type	*File Name Extension*
Joint Photographic Experts Group	.jpg and .jpeg
Tagged Image File Format	.tif and .tiff

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File Type	File Name Extension
Graphics Interchange Format	.gif (but not animated gif)
Bitmap	.bmp
Windows Metafile	.wmf and .emf
Portable Network Graphics	.png

Navigating Picture Folders

Getting around My Pictures is extremely easy and generally only requires using arrow keys on the keyboard or remote control. If you are using a mouse, you just point and click most of the time. Table 15-2 lists the keys used to get around in My Pictures.

Table 15-2 Navigation in My Pictures

Action	Remote control	Keyboard	Mouse
Move to folder or picture	Arrow buttons	Arrow keys	Point to item
Select folder or picture	OK or Select button	Enter key	Click left button
Return to previous screen	Back button	Backspace key	Point to back arrow from on-screen controls that appear when you move the mouse
More Info	More Info button		Click the right button

As you can see, whether you're using a keyboard, remote control, or a mouse, actions in My Pictures are largely point and click or are easily selected with the direction buttons and Select button on the remote control.

Viewing Your Pictures

Using the navigation controls described in the last section, move to any folder or picture and select it. Figure 15-5 shows the pictures inside of a folder. Note that the pictures are from a digital camera, have the naming convention of the camera, and have not been changed. In the upper-left corner of the screen is the name of the folder they are located in (Jack Pictures in this example) and on the top of the screen is the name of the file that is being pointed to along with its creation date.

In this view, all of the photos in the folder are sorted by name (basically the order in which they were taken since the digital camera numbers the pictures sequentially). Another option is to sort them by date. Again, since they are from a digital camera the date and time taken is essentially the same as the names of the files because the name of the file and the date and time taken are in the same order.

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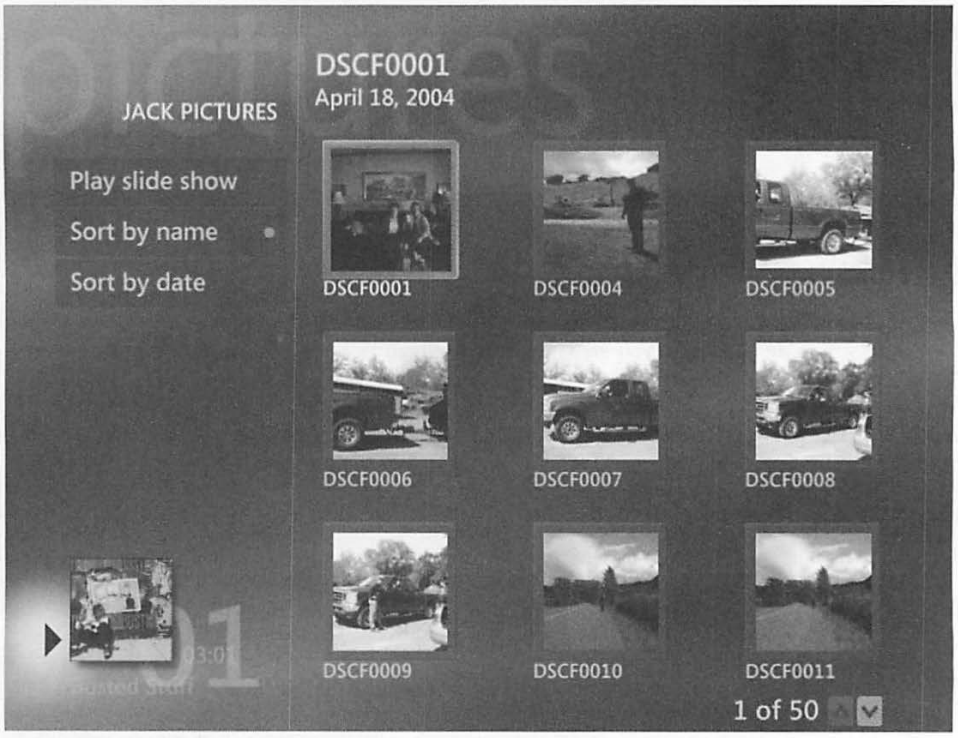


Figure 15-5: Picture files in a folder.

If you have files from any source that you have renamed, the Sort by Date view allows you to view the photos in the order they were taken or created, which can be a handy way to view certain photo libraries.

To view a photo individually, just select it and click on it to view it full-screen. The image will stay on the screen until you take an action. You can use your right or left arrow keys to advance to the next or previous picture in the folder. Figure 15-6 shows a picture displayed full-screen. Note that the file name is displayed in the upper-left corner of the screen. You can choose whether or not to display the file name from the Settings menu.

If you want to view all of the pictures in a folder without using the arrow keys to advance them, you can use the Play Slide Show command from the folder view, which plays all of the files in the folder.

Panning, Zooming, and Rotating Pictures

Once you have a picture displayed full-screen, you can use your remote control or keyboard to zoom in on the picture and then pan it up and down or left and right. This allows you to examine a picture in greater detail. Figure 15-7 shows the same picture as in Figure 15-6, but zoomed in on and panned for a closer look at the subject.

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Figure 15-6: File name displayed in a full-screen view of a picture.

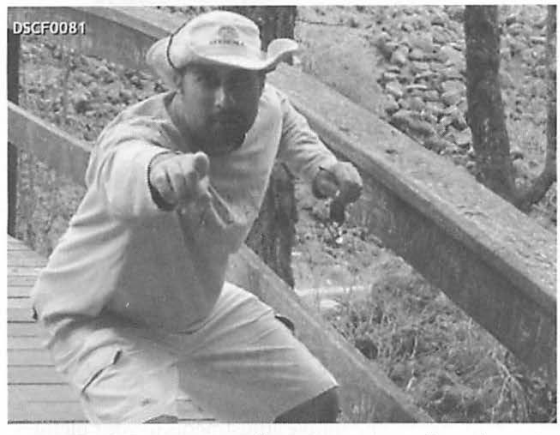


Figure 15-7: Zooming in and panning a picture for a closer view.

Note

To get to the menu that allows you to rotate, edit, print, or touch up a picture, press the Info button on your remote control or right-click the mouse and select Picture Details.

If you have a picture that was taken in portrait mode and is being displayed sideways on the screen, you can rotate it. To do so, select the picture and display it in the full-screen mode, and then

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press the Info button on your remote control or right-click the mouse. This brings up an on-screen menu over the picture. Choose Picture Details and you are brought to the Picture Details menu as shown in Figure 15-8. Select one of the Rotate buttons and the picture will be rotated in 90-degree increments.

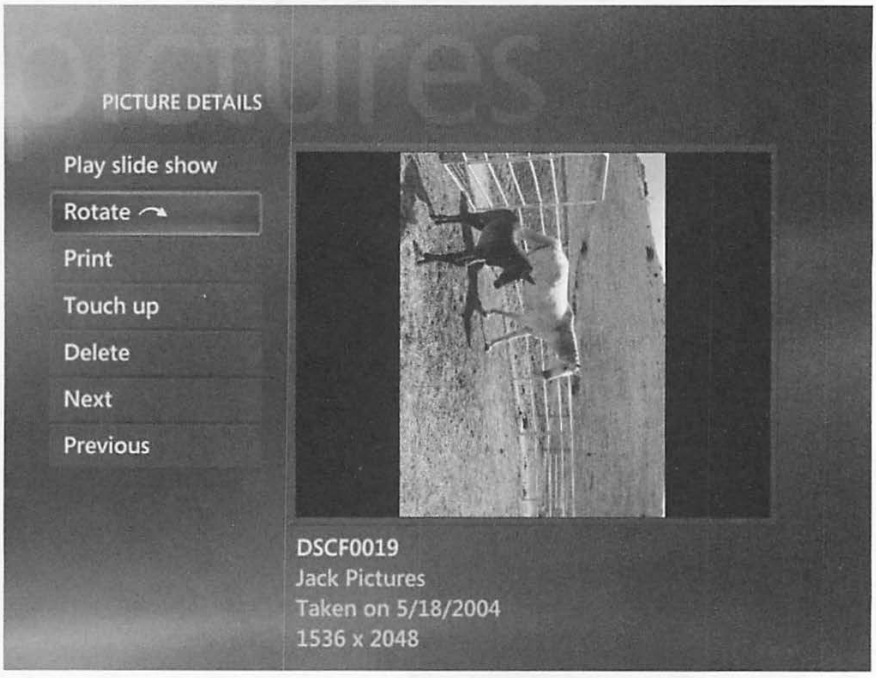


Figure 15-8: Picture in need of rotation for proper viewing.

Editing Images and Printing Pictures

The Picture Details menu in My Pictures allows you to make some simple adjustments to your pictures using a "touch-up" menu and also to print your pictures. Although these tools are not as extensive as ones found in dedicated image-editing programs such as Adobe Photoshop, they provide enough tools for making basic adjustments to your pictures without having to leave My Pictures.

Picture Touch-up

To touch up a picture, select the picture and display it in the full-screen mode, and press the More Info/Details button on your remote control. Then select Touch-Up. You arrive at the screen shown in Figure 15-9, which is the Touch-up menu. Here you can choose to correct red eye (the common effect

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of red dots appearing in the eyes of a subject when using a flash), adjust the contrast of the picture, and also crop it.

Figure 15-9 shows a picture that is being cropped to better fill the screen.

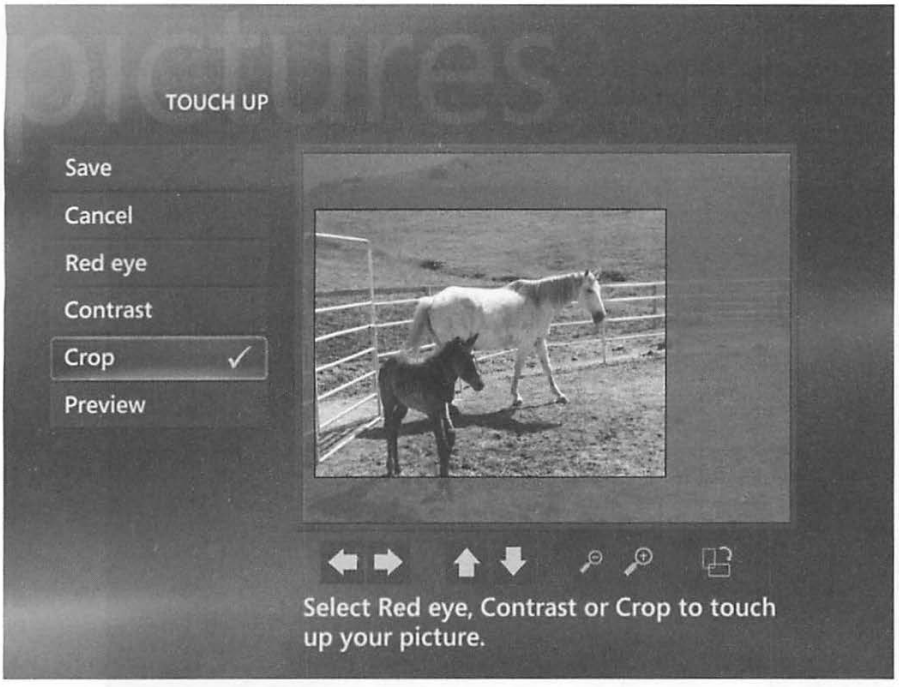


Figure 15-9: Cropping a picture in the Touch-up menu.

The other option in the Touch-up menu is to adjust the contrast. This is an automatic process—not one where you make the adjustment in incremental steps. My Pictures examines the picture and makes an adjustment to the overall image to produce a pleasing effect. You may like the results, or you may not. Most of the time it works great—especially when used with pictures of people. You can preview the picture by selecting the Preview button. If you like the result, choose Save from the menu and the edited picture will replace the original.

Printing Your Pictures

You can print your pictures directly from the Picture Details menu. When viewing any photo you want to send to your printer, press the Info button on your remote control or right-click the mouse and then select Picture Details to arrive at the menu shown in Figure 15-9. Whether after making any touch-ups or using the picture as-is, click the Print button to print the picture.

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Cross-Reference

Chapter 3 talks about how to set up your printer. Media Center uses your default printer and its settings when printing pictures.

As shown in Figure 15-10, Media Center uses a very basic approach to printing pictures. It uses the default printer you have established in Windows XP, its settings (quality, paper, orientation, and any other preferences you have set), and prints the picture full-page.

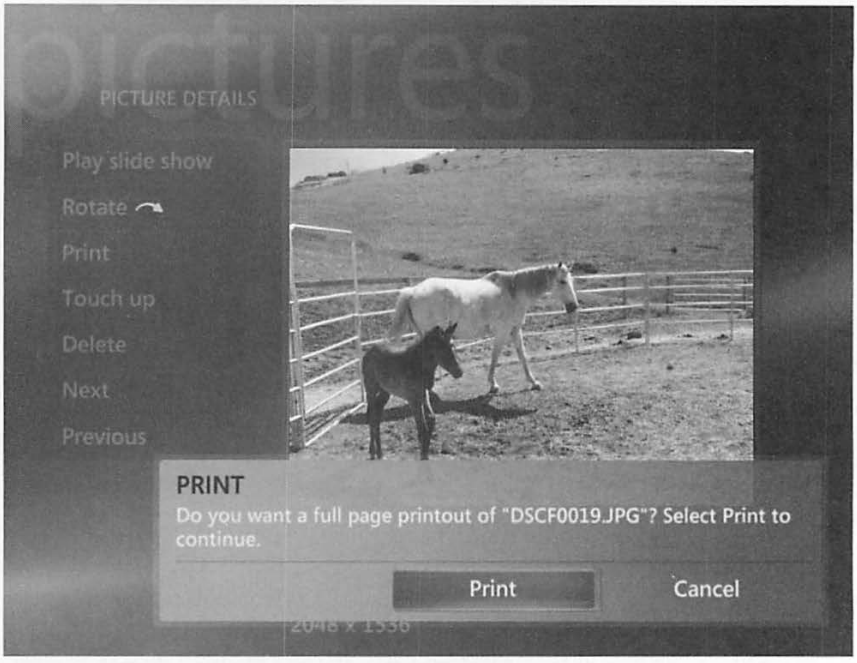


Figure 15-10: Printing a picture from the Picture Details menu.

You can do some simple planning to make adjustments to your printer preferences to make the printing feature of Media Center work best for you.

If, for example, you want to print picture as 4″ × 6″ prints on high-quality glossy 4″ × 6″ paper, leave Media Center and go to your printer preferences using the Printer control panel in Windows XP, set the size of the paper and printing quality, and save them as the default for your printer. Then load your printer with the photo paper. When you print your pictures from Media Center, they will print at the right size and quality.

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Summary

One of the nicest ways to view your photos is on your TV. Media Center makes it easy and practical to get at your entire digital photo library and to use either your computer monitor or TV to view slideshows. My Pictures in Media Center also offers you the ability to touch-up the pictures and print them.

Prior to using My Pictures, it is essential that you identify where your picture files are located. Media Center only searches for picture files in the folders you identified using the Find Pictures menu.

Naming photos and their folders and understanding how creation dates are established will help you sort and find your pictures.

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Chapter 16

Creating Slideshows Using My Pictures



With all of your picture management skills in place (as covered in Chapter 15) you are ready to enjoy viewing all of your picture files in a slideshow. My Pictures does slideshows better than just about any other program. Media Center improves on computer slideshows by adding sophisticated motion in addition to transitions. The combination of movement and dissolves makes a slideshow in Media Center a truly TV-like video experience. Using a video-style visualization of pictures that move, pan, and transition elegantly combined with the ability to play music along with them makes it the slideshow program of choice.

Because the pictures on your computer were most likely not "slides" to start off with, the name "slideshow" comes from the yesteryear activity of using a slide projector to project the images of slides onto a wall or reflective slide screen. The slides were put in order of play in the slide projector, and using an automatic advance or a manual advance controller, the slides were displayed one after another.

The name "slideshow" continues to be an appropriate name since slideshows on a computer really have not looked that much different from those from a slide projector. They have been a series of slides, presented one after another, projected onto your (computer) screen.

Slideshow Settings

Go to the Start Screen, select Settings, and then select Pictures to arrive at the settings menu for My Pictures. All of the settings in this menu, shown in Figure 16-1, are important for a great slideshow, and we will look at each one in detail. The settings allow controlling the style of slideshow, the transition effect, what information is displayed over the slides (if any), and how to play music with the slideshow.

Here are each of the settings and how they allow you to customize a slideshow:

- **Show pictures in random order**—Presents pictures in a slideshow in random order. If you uncheck the box, pictures are displayed in their sort order by file name or file date.
- **Show pictures in subfolders**—This plays the pictures in subfolders within a primary folder.
- **Show caption**—This applies to full-screen viewing of pictures and pictures in slideshows. The caption displays the file name on top of the picture being shown.

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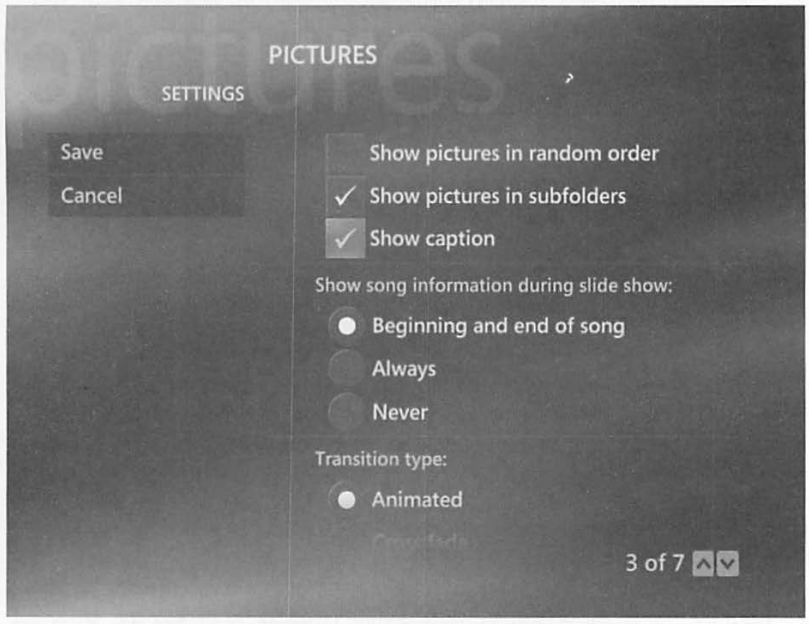


Figure 16-1: The My Pictures Settings menu.

- **Show song information during the slide show:**
  - **Beginning and end of song**—Song information and album art is shown at the beginning and end of song when you play songs during a slideshow. The information is displayed over the pictures in the slideshow. Figure 16-2 shows song information displayed over a picture.
  - **Always**—The song information is shown at all times over the pictures in the slideshow.
  - **Never**—Song information is not displayed during a slideshow.
- **Transitions type:**
  - **Animated**—The pictures are sized larger than the screen, and they are moved gently in panning motions while being displayed. The pictures fade in and out of one another as they are changed.
  - **Cross fade**—The pictures are displayed full-screen and remain still, and the pictures fade in and out of one another when they change.
  - **None**—Pictures are shown full-screen and cut from one to another without a fade or transition.
- **Transition time:** The duration of each slide is determined here. Times from one second to sixty seconds can be selected.
- **Slide show background color:** When portrait pictures are displayed, they are put against a background because they cannot fill a landscape screen. This setting controls the color of the

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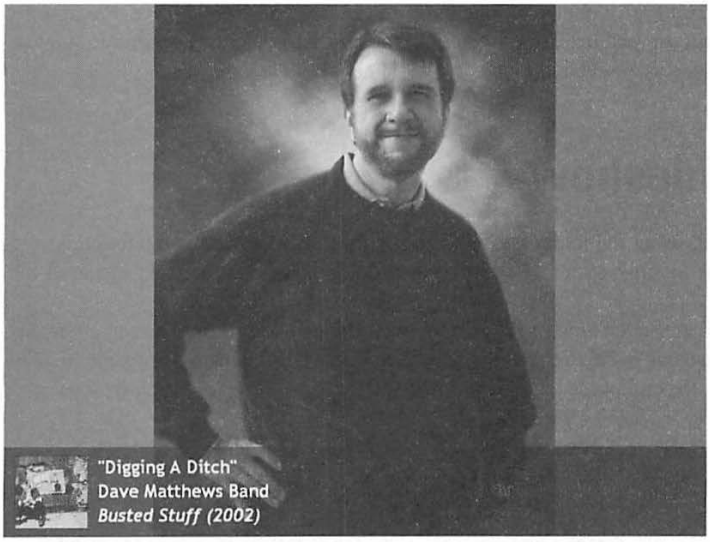


Figure 16-2: Song information displayed over a picture.

background with choices being black, white, or 10 percent increments of gray between black and white. Figure 16-3 shows a portrait-shaped picture against a solid black background.



Figure 16-3: Solid black background chosen for pictures that show a background.

With these settings you can change the look and feel of any slideshow. For family or personal slideshows, you may want to have transitions and view pictures in a random order with the slideshow including subfolders. For a formal slideshow, such as for a business presentation, you would want to only include the folder for your slideshow, show them in actual order instead of random order, and choose to not use transitions.

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Other effects such as captions are a personal preference. In general, you should leave the captions off since they do detract from the picture. They are helpful in identifying pictures at certain times so it is a great feature to have when you need it.

Playing a Slideshow

From the My Pictures menu, select the folder you want to use for a slideshow. If you have chosen to include subfolders from the Settings menu, it also plays any folders you have nestled inside of the selected folder.

From the menu choices on the left side of the screen, choose Play slide show. The screen begins playing the slideshow full-screen with the settings you have chosen from the Settings menu. The pictures move forward until the end of the folder is reached and then the show restarts and loops until you choose to stop it.



TIP

Although you can continue to use any screen saver you want, using the slideshow feature in My Pictures makes a great screen saver—especially when you use a TV as your primary display.

Navigation in a Slideshow

Table 16-1 shows the remote control commands that you can use during a slideshow. You can also use their equivalents on the keyboard or the mouse using on-screen controls.

Table 16-1 Slideshow Transport Controls

Action	*Press*
Play slideshow	Play
Go to next picture	FWD/Skip/right arrow
Go to previous picture	Rewind/Replay/left arrow
Fast-forward	FWD
Rewind	REW
Pause/resume	Pause
Stop slideshow	Stop

Playing Music During a Slideshow

You can play music from My Music during a slideshow. This adds a lot to your experience, and with some planning you can even create custom playlists for slideshows.

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Music in slideshows in not synchronized to the actual slideshow. Music is played in the background and does not start or stop with the beginning or end of the slideshow. Basically, you can play music from My Music at the same time you are watching a slideshow. The transport controls during a slideshow control the pictures—not the music.

To play music during your slideshow, first go to My Music and select a playlist or selection of songs and start them playing. Select "repeat" mode if you don't want the music to stop during the show. Once you have started your music, return to My Pictures and begin your slideshow.

The music will play and if you want you can even display information about the song playing by choosing to display song information at the beginning and end of song, or at all times, from the Settings menu.

Fine-Tuning Your Slideshow

With the options available from the Settings menu you can fine-tune a slideshow in advance of showing it. Transitions, slide time duration, captions, and background colors all affect the overall slideshow experience.

Knowing how to manage your folders and group your pictures into folders is also a great way to create a good slideshow.

TIP

You can create a special folder for your slideshow. Using Windows Explorer from Windows XP, copy or create shortcuts from a variety of folders into your slideshow folder and name it. This allows you to create a unique slideshow that spans folders that only include the pictures you really want. This has the added benefit of saving a lot of hard drive space.

Adding a custom music playlist to your special slideshow is also a great technique. By creating a mix of songs that echo the mood and feel of your pictures, you can create a perfect soundtrack for the slideshow.

Finally, before showing it to others, sit back and preview the show. Go back and make changes to both the mix of picture and the music if needed.

Summary

Using the file management techniques for picture folders covered in Chapter 15, you can use the slideshow feature of My Pictures to create highly visual, video-like slideshows for display on your TV or computer monitor. By adding shortcuts to file folders containing digital pictures to the My Pictures folder, you can continue to store your pictures anywhere you choose.

The Settings menu allows you to control transitions, slide duration, captions for pictures, and background colors during the show. You can add music to a slideshow by creating a custom music playlist for it or using any existing playlist or choice of album or artist.

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Chapter 17

Playing Home Movies with My Video



Playing videos is something that Media Center does extremely well. The video enhancements Microsoft incorporated to make low-resolution TV programs look fantastic on just about any TV or display connected to your Media Center PC make movies that you create on a digital camcorder look better than you've ever seen them. The same goes for old home movies from 8mm, Super 8 films, and from analog camcorders.

Media Center plays videos the same way—and with the same easy-to-use controls—as TV programs and music. If you have watched TV or played music in Media Center, you'll be right at home in My Video. There is one caveat: getting your home videos onto your computer requires some knowledge of file transfers and connecting your camcorder or VCR to your Media Center PC. This chapter takes a look at capturing your movies and then playing them in Media Center.

Getting Videos into Your Media Center PC

Home movies and videos come in two varieties: analog and digital. What it boils down to is that if you don't have a digital camcorder, everything else is analog. Between the two, digital videos are the easiest to get into your PC, and the quality is generally excellent.

Media Center is all about playing videos—not capturing them. Although it does allow you to connect a digital camcorder to your Media Center PC and play videos from it using the transport controls in Media Center, it does not save the video as a file.

Use Movie Maker to Capture Video

To "capture" analog or digital videos from your camcorder, VCR or other video source, you will need to use a capture program. Media Center PCs come equipped with Microsoft's Movie Maker software, which can be used to capture, edit, and create videos.

Because your Media Center PC has an IEEE 1394/Firewire connector, it can easily capture digital videos in Movie Maker and other video editing programs you may have. Since it also has a TV tuner card, it can be used to capture analog video by other video-editing programs you may have that can capture analog video.

Check with your owner's manual or on-screen help to see which video capturing programs in addition to Movie Maker your computer came with and how to use them. For now, Movie Maker will

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do a great job for capturing your analog or digital videos. Figure 17-1 shows Movie Maker in action. Use Movie Maker's on-screen help and video-capturing wizards to capture your videos and then use its editing features to edit your video. When you have a video that you are happy with, save it to your hard drive.



Figure 17-1: Movie Maker captures and edits home videos.

You will be able to find videos files in any location on your PC or home network, so you can place your video files where you choose. In addition, if you have video files such as video clips that you recorded on a digital camera that are stored on the camera or memory storage card, they can be viewed in My Videos, too. Before saving any files, it is good to understand which file formats are best to work with for your videos in general, and Media Center specifically.

File Formats for Videos

You can capture videos and save them in a variety of formats. The good news is that Media Center supports most popular formats. When capturing video, remember that just like with picture files, there are uncompressed formats such as AVI that create huge files, and compressed formats such as MPEG that save the video at a much smaller size with an acceptable reduction in overall video quality.

Movie Maker guides you through the file format process; a good practice is to capture a few videos at different compression settings and see how you like the results. Once you have saved a few files, take a look at how large they are and consider how much space you want to commit to storing home videos. That will help you determine which compression setting is best for you.

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Table 17-1 shows the file formats supported by Media Center for videos:

Table 17-1 Supported Video Files Formats

File Type	*File Name Extension*
Windows Media video and playlists	.wmv, .asf, .asx, .wpf
AVI video file	.avi
MPEG video file	.mpeg, .mpg, .mpe, .m1v, .mp2, .mpv2, .mpa
Indeo video files	.ivf

Viewing Videos with Media Center

My Video is the place you go to play your home videos in Media Center. Using all of the same controls, navigation, and methods used throughout Media Center, it makes viewing home video files as easy as viewing photos or listening to music.

From the Start Screen, select My Video. You see the menu shown in Figure 17-2.

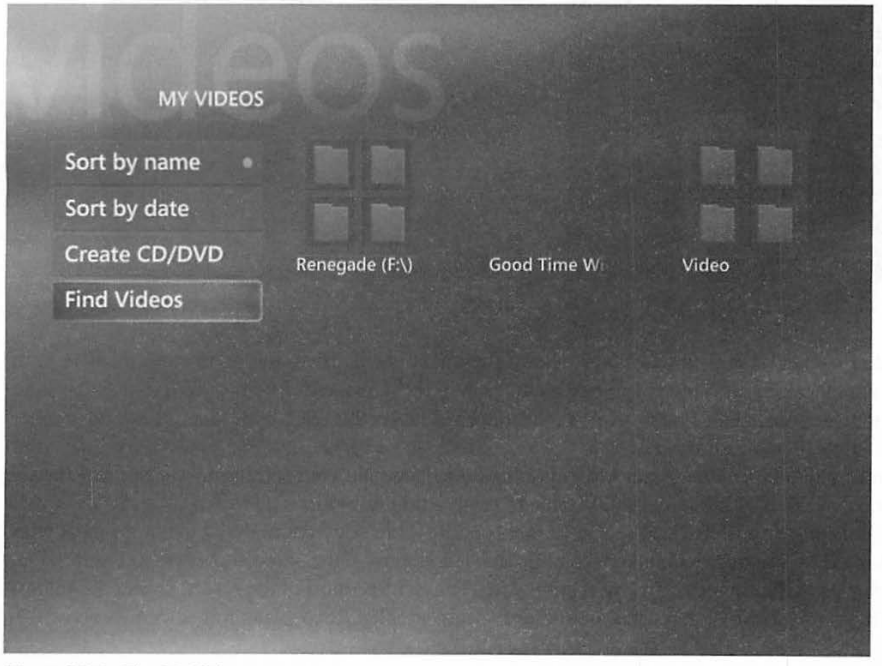


Figure 17-2: The My Videos menu.

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The first task is to locate your video files on your hard drives, CDs or DVDs, home network, or connected device such as a video camera attached to your PC with a FireWire cable or memory storage card.

Click the Find Videos button, as shown in Figure 17-2, and you go through the same process as with music and pictures of having Media Center find the file folders where you have stored your videos.

The next menu asks if you wish to add folders from the computer you are working on or from shared folders from another computer on a home network. Choose the one that contains the folders you are looking for and click Next. You arrive at the menu shown in Figure 17-3.

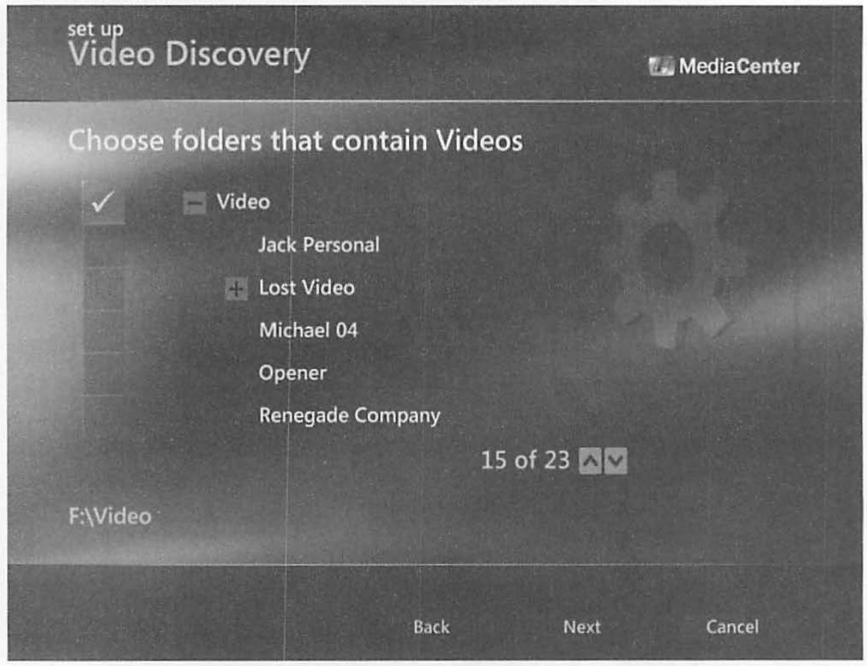


Figure 17-3: The Add folders menu allows you to add video files to My Videos.

By adding a check mark in the boxes next to the name of the drive, folder, or device where your video files are located, My Videos will be able to look in those places for your videos. Once you have made your selections, click Finish. If you add more videos to the selected folders in the future, My Videos will find them automatically.

With your video files added, your My Videos menu will contain your selections. Using the standard metaphor of folders and files, you will be able to easily find your videos.

When you click on a folder, you see the contents of the folder. Even though the files are videos, they are represented by a picture icon taken from the first few frames of the video, as shown in Figure 17-4. The files can be sorted by name or by creation date. The right portion of the screen shows the folders or video files; to play a video, select one and click on it. The video plays full-screen as shown in Figure 17-5.

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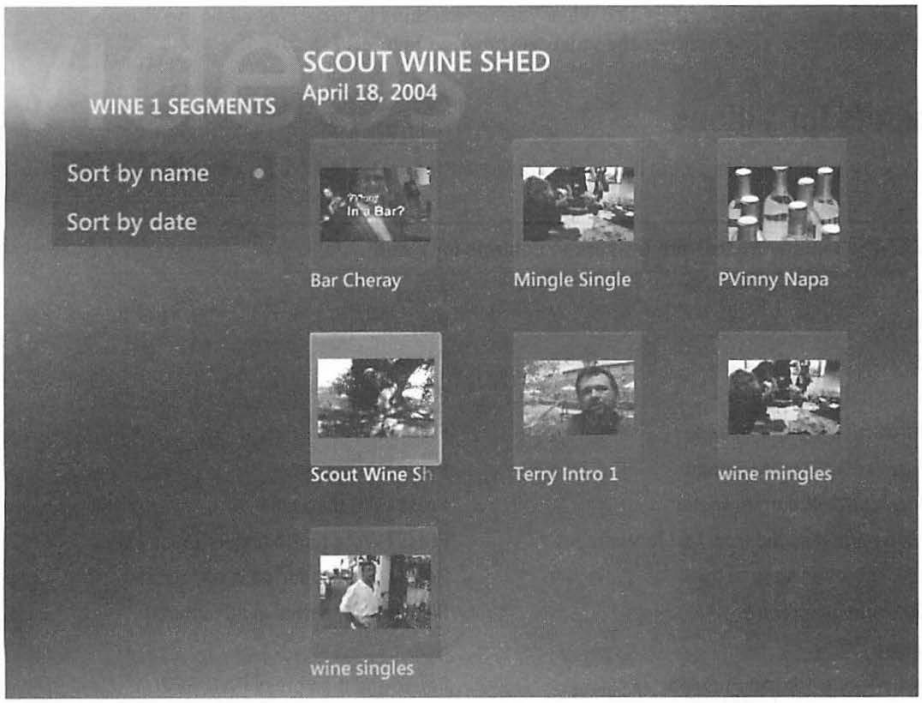


Figure 17-4: Video files in a folder sorted by name.



Figure 17-5: A video playing full-frame in My Videos.

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To view a time counter for the video while you are watching it, press Play while the video is playing. You will see a visual time bar over the video as shown in Figure 17-5.

Controls for Videos

Once you select a video and play it, use the controls listed in Table 17-2 for navigating the video.

Table 17-2 Remote Control and On-screen Controls for Video

Action	*Press*
Play video	Play
Pause video	Pause
Resume a paused video	Play or Pause
Fast forward 3X normal speed	FWD
Fast forward 40X normal speed	Press FWD again
Fast forward 250X normal speed	Press FWD third time
Return to normal speed from fast forward	Press FWD a fourth time or press Play
Replay/Skip seven second back	Replay (not supported in all formats)
Skip 29 seconds forward	Skip (not supported in all formats)
Stop video	Stop
Frame-by-frame advance/rewind	Pause and then press FWD/REW

Information about a Video

You can get information about the video you are playing by pressing the Info button on the remote control or by right-clicking the mouse. From the on-screen menu that pops up, select Video Details and you see the menu shown in Figure 17-6. The name of the video, file folder name, modification or creation date, and duration of the video are displayed beneath the large video window in the center of the screen. You can click on the video window to return to playing the video. From this menu you can also choose to delete the video or move to the next or previous video in the folder.

Adding Videos from a Video Camera or Digital Camera with Video

If you have a digital video camera or digital still camera with video, you can connect it to your Media Center PC with an IEEE 1394/Firewire cable. Once connected, Media Center will recognize the camera and display it as a folder in the My Videos menu. To add the videos from the device, click the Folder icon for the camcorder or digital camera.

Figure 17-7 shows the first screen in the process of getting a video from a camcorder or digital camera with video files on its memory card into Media Center. By selecting the device, Media Center

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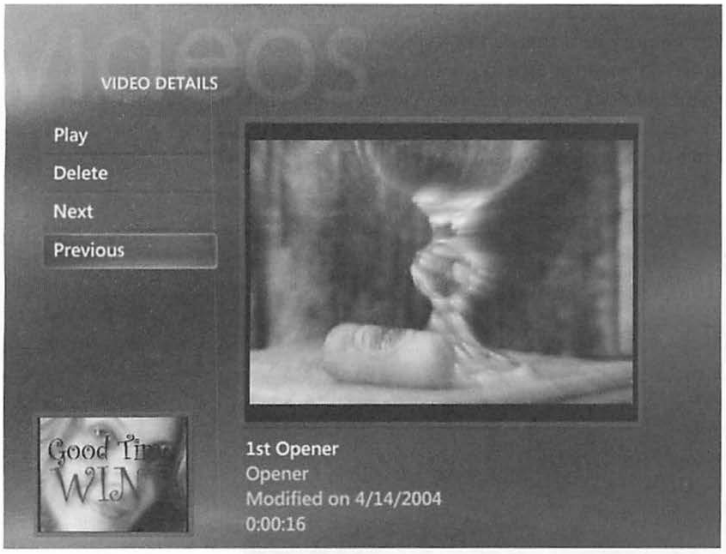


Figure 17-6: File information about a video.

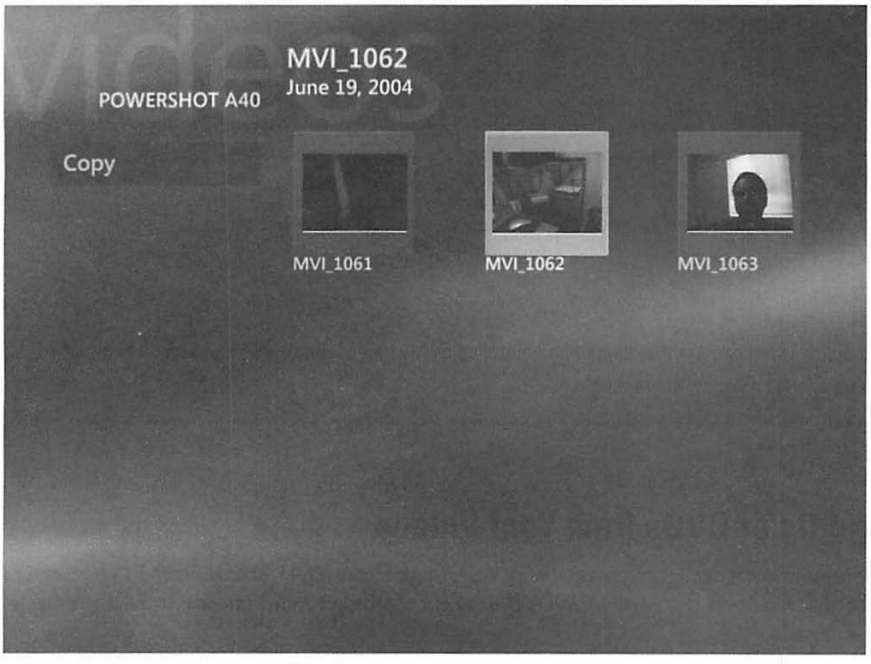


Figure 17-7: First menu to copy files from a camcorder or digital camera into My Videos.

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can copy files from it to your computer. Figure 17-7 shows that a Canon PowerShot 40 is attached and has several videos on its memory card that can be copied.

After selecting Copy, you see the menu shown in Figure 17-8. Media Center is asking if you wish to store the video in your My Videos folder or in the Shared Videos folder where anyone on the network or using your computer can see them. You can also type in the name for the file, and opt to delete the file from the device after it has been copied.

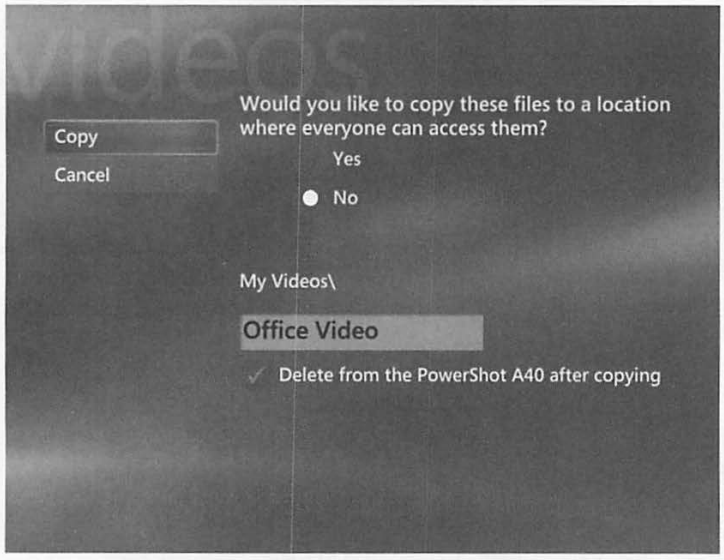


Figure 17-8: Choose the location and folder name for the video you are about to copy.

Once the video is transferred to your PC, you can view it like any other video.

Note

If you have a digital video camera that cannot be controlled by My Video, check your connection and ensure that the camera is on in the play, not record, mode.

Making CDs or DVDs from Your Videos

The final option in My Videos is to transfer your videos to a CD or DVD. You will need to have a CD or DVD recorder. Click on the Create CD/DVD to begin the process and be sure to have writeable media in the drive.

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Summary

You can capture your own home movies by attaching a digital or analog camcorder, VCR, or other analog video device to your Media Center PC. You can save your videos to your hard drive and even edit them using Movie Maker or any other video-editing program that can capture digital or analog videos.

Using either videos you captured or videos you may already have on your PC, you can use My Videos in Media Center to view them with outstanding quality.

If you have a digital camcorder connected to your PC, you can view the video on its tape the same way you would a video file using the same transport controls as you would for a video file.

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Part VI

Expanding Media Center

Chapter 18
Adding More Programs to Media Center

Chapter 19
Accessing Internet Content from Online Spotlight

Chapter 20
Final Thoughts about Media Center

Petitioner Disney Ex-1042, 0306

Chapter 18

Adding More Programs to Media Center



When it comes to playing and managing media such as TV, music, and pictures, Media Center comes with just about everything you need right out of the box. That's not to say that it couldn't offer more; as a PC user you are no doubt used to being able to add programs to expand the utility, functionality, and fun of your computer.

Carrying on in that fine tradition, Media Center enables you to add programs—as long as they are designed for Media Center. With Media Center's unique environment and user interface, programs that can be added to Media Center must have a TV-centric interface that can be controlled using a mouse, keyboard, or remote control.

This chapter takes a look at how you add programs to Media Center and where to find them.

The Launch Pad

You may have noticed that the Media Center Start Screen has a button labeled More Programs. Think of More Programs as the "launch pad" for applications that you add to Media Center. By placing add-on programs in a special area, you can have as many additional programs as you want without adding complexity to the Start Screen.

An easy way to think of how additional programs are positioned in Media Center is to equate them to programs you add to Windows XP. When you click the Start button in Windows XP, there is a list of programs that remain constant in the menu. Those are like the standard programs such as My TV and My Pictures in Media Center's Start Screen. To get to more programs in Windows XP, you click the All Programs button and you find a list of all the programs on your PC. When you run a program, it is added to a list of most recently used programs in the Windows XP Start menu.

Media Center uses the exact same concept. To reach additional programs, you go to More Programs from the Start Screen. Once you launch a program, it is added as a shortcut when you highlight the More Programs button on the Start Screen. The three most recently used programs are added, as shown in Figure 18-1. If you have yet to use any additional programs, you will only see More Programs.

When you click the More Programs button, you go to the menu shown in Figure 18-2. Any programs that have been added to Media Center are listed as menu items. Microsoft refers to this screen as the More Programs "folder." When you compare the screen to others in Media Center, the term folder makes sense—the additional programs are listed like file icons in a folder.

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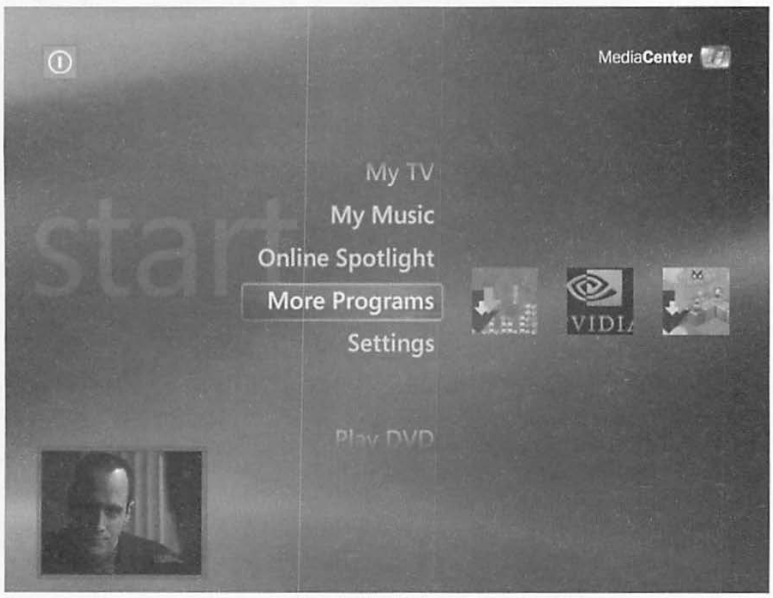


Figure 18-1: The Start Screen with three more programs in the menu.

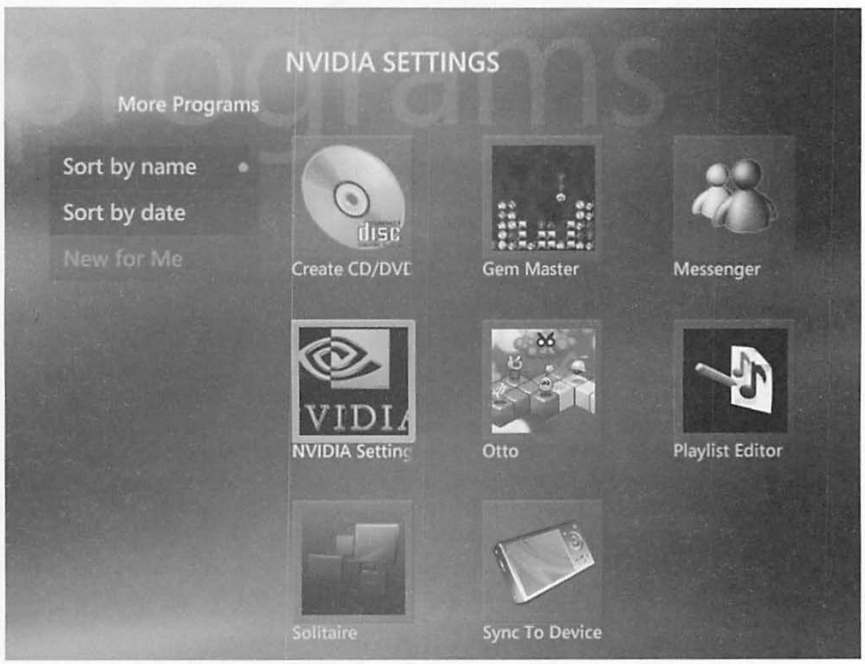


Figure 18-2: The More Programs folder.

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Shortcuts added to the Media Center More Programs folder will appear in the More Programs menu. You can find the folder from Windows XP by clicking the Start button and choosing All Programs ➪ Accessories ➪ Media Center. You can see an example of this in Figure 18-3.

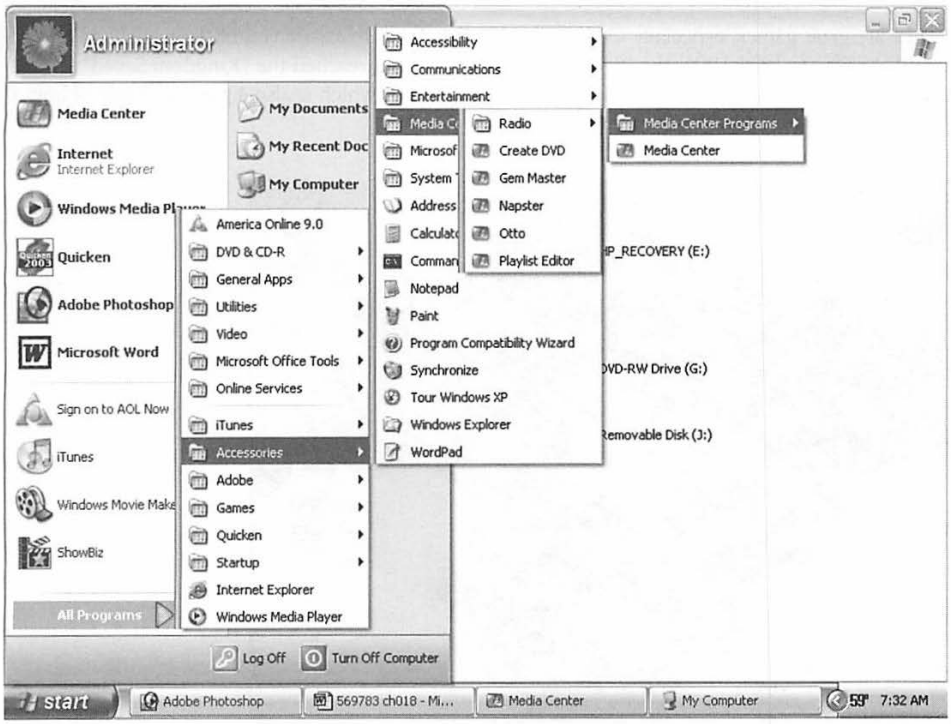


Figure 18-3: The Media Center Programs folder displayed in Windows XP.

Note

Although you can add shortcuts to the folder, only programs that are Media Center applications will appear in the More Programs menu in Media Center.

Adding Programs

Now that you know where the More Programs menu is, the next thing to learn is how to add additional programs to it.

Chances are that your Media Center PC came with a few programs waiting to be installed. Prior to actually adding them, the menu icons are dimmed. When you click them and go through the installation, they thereafter appear in full color.

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Try installing the programs that may have come with your PC first. Your PC probably came with two games, Otto and Gem Master. If the icons are dimmed, it is because they are shortcuts to an install program for the games that are already on your computer. After a short installation routine asking you if you agree to the user license, your program icons will be in color and you will be able to play the games.

They are great games, especially Otto. Determined as I was to assure you of their quality, I played Otto all the way to level 100—the highest level possible—and reached the "Kingdom Saved" screen. I have included proof of this accomplishment in Figure 18-4, which is also a good example of how a game program looks in Media Center.



Figure 18-4: Otto, a Media Center game.

After installing the programs that came with your PC, you can add programs from the Internet or ones that you purchased on a CD-ROM.

All programs come with an installation routine that ensures they are being installed on a Media Center PC (they cannot be installed on a standard PC). The installation is very simple—the program is installed on your PC and a shortcut to it is placed in the More Programs menu.

Once you choose to begin an installation, follow the on-screen instructions. You are given the option of opening the installation program or saving it for installation at a later time. At this point, the installation process is identical to those used for Windows XP programs. You will see download progress menus, be asked if you agree to the user license, and then confirm that you want to install the program.

Once the installation is completed, you will see a pop-up box saying that the installation was successful and you will be returned to the page you started the download from. You can use your Back remote control button to return to Media Center and go to More Programs to check that the program is present.

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Easy-to-Find Add-on Programs

Media Center features a link in Online Spotlight to a set of programs called Microsoft Power Toys for Media Center. These are free and well worth the download and installation time. The programs in Power Toys include Alarm Clock and Solitaire.

Cross-Reference

Online Spotlight is covered in full detail in Chapter 19.

To add these programs to Media Center, from the Start Screen go to Online Spotlight. One of the regular items is Downloads. The Download section is divided into two areas; on top is the Download button, which can be clicked to summon a list of available downloads. Under the Download button is a button that features a highlighted download. Figure 18-5 shows the Online Spotlight menu with the Download button highlighted and the PrimeTime DVD software featured.

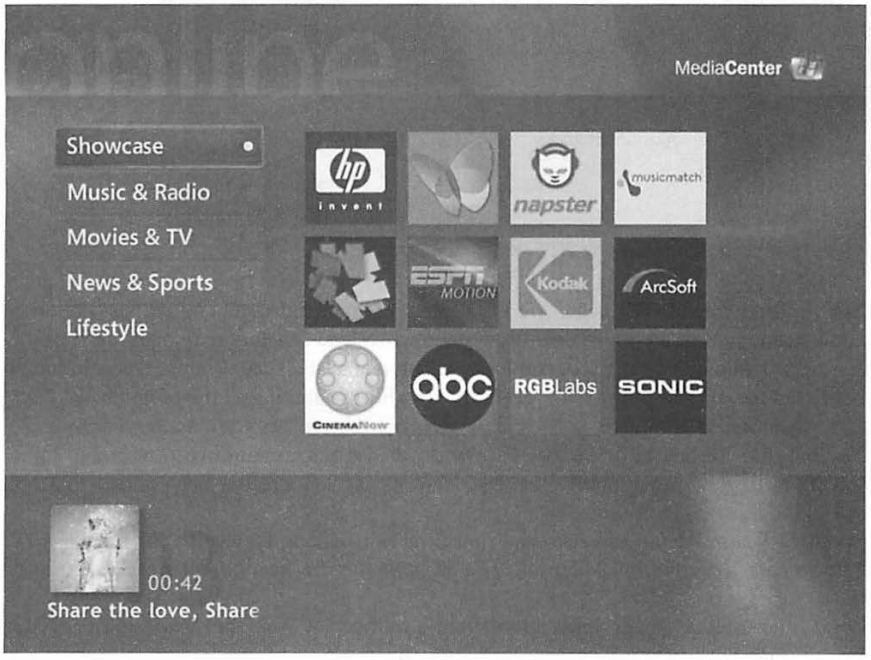


Figure 18-5: The Online Spotlight menu.

When you click Download, you are brought to the menu shown in Figure 18-6. From here you can begin the Power Toys download, so be sure that you are connected to the Internet. When you select

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Visit the Power Toys Page you are prompted that you are leaving Media Center and that the page may not display properly. This is important if you are using a TV as your display because you will leave Media Center and go to a Microsoft Web page using Internet Explorer. You might want to switch to a computer monitor in such instances for better viewing of small type used on Web pages.

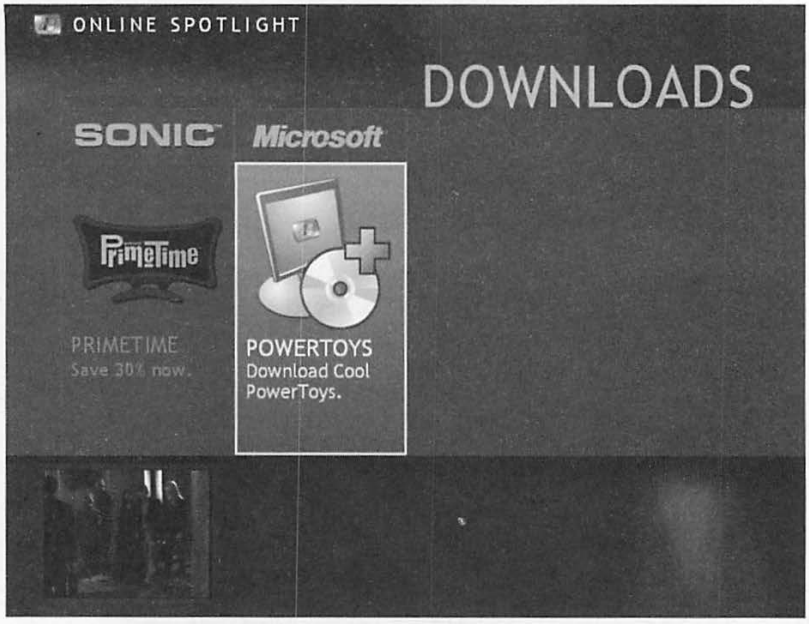


Figure 18-6: The Download menu featuring the Power Toys download.

On the Microsoft download Web page, you install each program separately. When you choose a program to download, you see a pop-up download menu where you can choose to open (or run) the installation of the program or save the program for installation at a later time. Choose Open and then follow the on-screen menus and prompts to accept the user license and install the program.

When the installation is complete, you can use the Back button on your remote control, the backspace key on your keyboard, or the back arrow on the on-screen controls to return to More Programs and try your new programs. Figure 18-7 shows that Solitaire has been added to More Programs.

Online Spotlight features programs such as PrimeTime (for making DVDs of your recorded TV shows) and downloads directly from Microsoft. Not all programs are free, but all are Media Center applications.

You can find other Media Center applications from a number of Web sites dedicated to Media Center use.

Cross-Reference

Check Appendix C for a list of Media Center Web sites.

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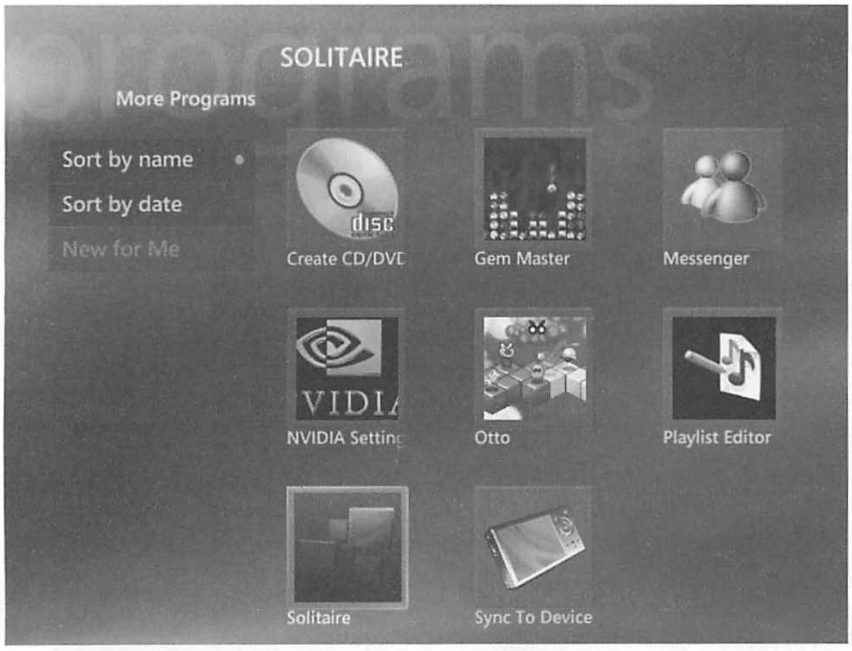


Figure 18-7: Solitaire has been added to More Programs.

Examples of Add-on Programs

The following sections are examples and descriptions of the add-on programs that come with most Media Center PCs.

PrimeTime

If it didn't come with your Media Center PC, one program worth purchasing is PrimeTime from Sonic. It enables you to make DVDs from the TV programs you record in My TV (naturally you will need a DVD burner). The user interface is close to Media Center and it works great. Figure 18-8 shows PrimeTime's main menu.

Napster 2.0

You've gotta have Napster! Napster enables you to listen to Napster Radio and preview or purchase music tracks from an amazing number of artists. Music downloads are 99 cents each and free downloads are featured regularly. Napster's parent company Roxio has really done a great job making the complex process of finding and buying music a pleasurable, intuitive Media Center experience. You can link to the installation of Napster from Online Spotlight's Music button. Figure 18-9 shows the main menu once you get there.

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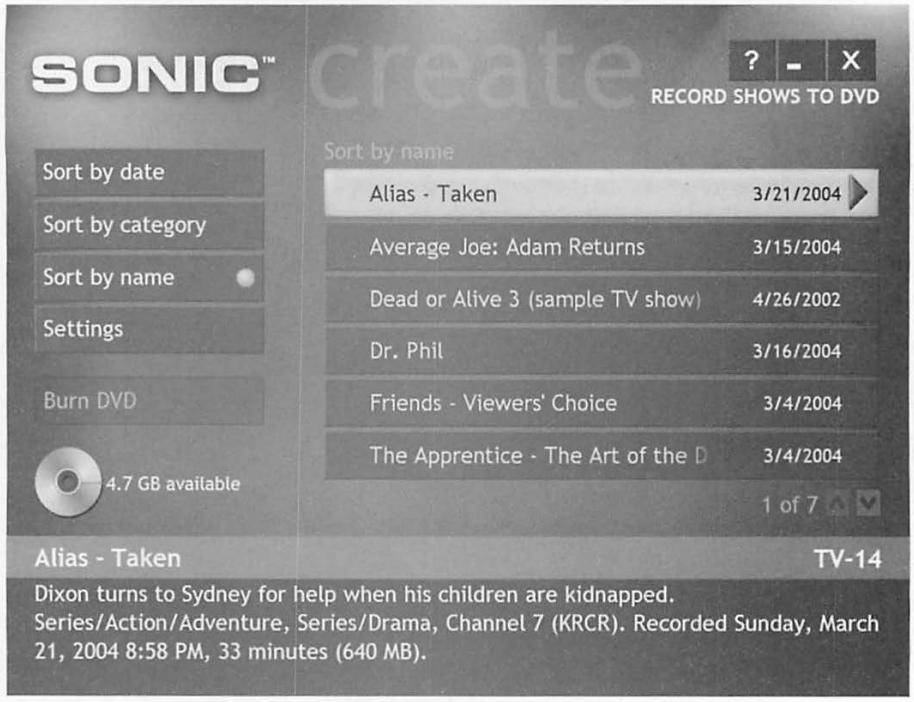


Figure 18-8: The PrimeTime DVD authoring program.



Figure 18-9: Napster—legal!

Petitioner Disney Ex-1042, 0315

Solitaire

If you are like many PC users in the world, you likely pass the workday away occasionally playing the freebie Solitaire game that comes with all Windows XP PCs. You can continue the good work in Media Center with this free download from Microsoft's Power Toys. Figure 18-10 shows a game waiting to be played.

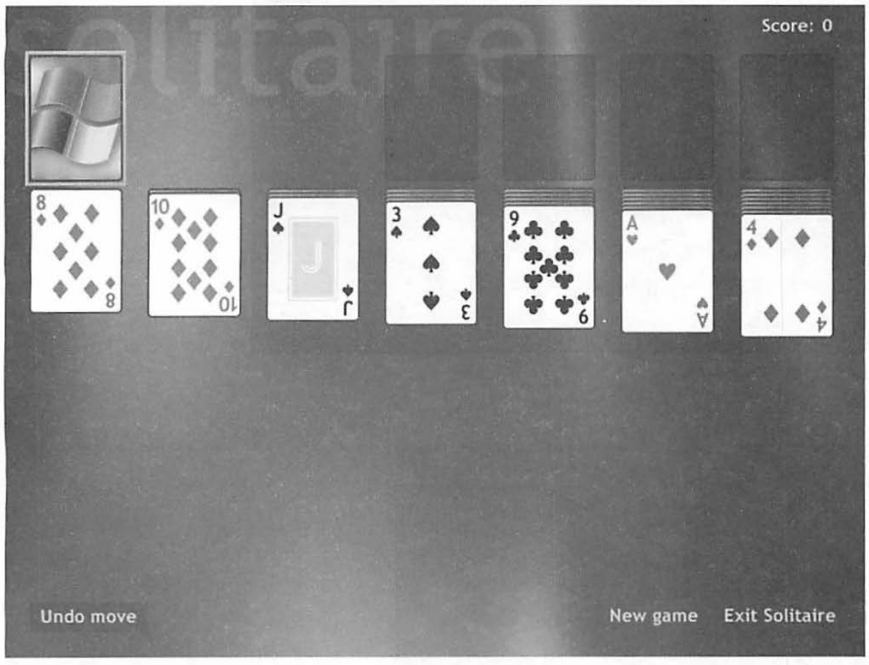


Figure 18-10: Media Center Solitaire.

Gem Master

If you like puzzle games, Gem Master is a classic Tetris-style game. In it, you attempt to align colored gems and eliminate them before the screen fills up. The game has great graphics and sound. If you are lucky, it came with your Media Center PC. Figure 18-11 shows a game in progress.

Otto

As mentioned earlier in this chapter, it's hard to find a more addicting game than Otto. Looking like a game for toddlers, don't let the simple graphics fool you—it's game of skill. You use your direction keys to move Otto around a variety of boards where he simply changes the colors of squares he lands on—if the plethora of meanies don't get him first. Figure 18-12 shows Otto jumping for his life. Like Gem Master, hopefully Otto is already on your Media Center PC.

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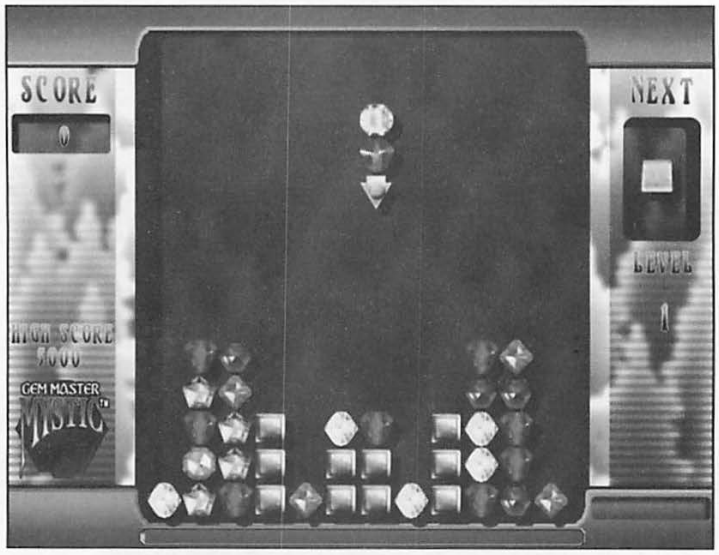


Figure 18-11: Gem Master.

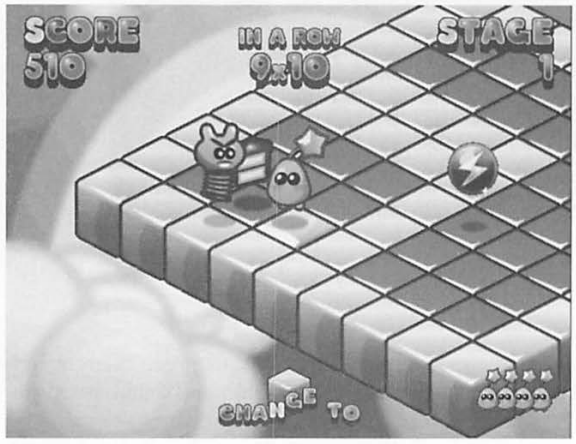


Figure 18-12: Otto.

Sync to Device

A new generation of portable media devices designed to work hand-in-hand with Media Center are starting to reach market in late 2004. Called Portable Media Centers, they are hand-held media players that allow you to take much of music, videos, pictures, and even recorded TV programs with you wherever you go. With large LCD screens and the same TV-like user interface, these devices

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are excellent companions to your Media Center PC. The Sync to Device application found in More Programs enables you to easily set up the transfer of content between your Media Center PC and your Portable Media Center.

A Portable Media Center is shown in Figure 18-13.



Figure 18-13: A Portable Media Center allows you to take content with you.

Summary

You can add additional programs that adhere to the user experience of Media Center from a CD-ROM or by downloading them from the Internet in Online Spotlight. Once you have added a program, it can be launched from the More Programs menu. Three of the most recently used programs are added to the Start Screen menu.

Media Center comes with some sample add-on programs, and you can find more downloads in Online Spotlight, including free programs from Microsoft.

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Chapter 19

Accessing Internet Content from Online Spotlight



By now you probably are wondering why Media Center does not include a Web browser. It does make extensive use of the Internet—mainly to get data and music licensing rights. As a part of the Windows XP operating system you would think that going to the Web would be a snap for Media Center. It is. One of the main reasons for the lack of a traditional Web browser like Internet Explorer is the very nature of Media Center itself: it's a TV experience. Web sites are not formatted to work for TV viewing.

By controlling what Web content you access with Media Center, Microsoft assures you that the Web content you do see will display correctly on a TV and match the overall user interface of Media Center. As time goes on, more and more content providers will begin to format products to work in Media Center, so the future looks bright.

Even though it's highly disguised, Media Center does have a Web browser function: Online Spotlight. Mixing content on the computer and content from the Internet, it creates a Media Center Internet solution that works well on any display, whether you're using a remote control or mouse and keyboard.

This chapter looks at Online Spotlight and some of the content and information you can get to with it.

Note

Really need to get to the Internet? You're using a full-powered PC. Leave Media Center and use your favorite Web browser in Windows XP. Be sure to switch to a computer monitor if you are currently using a TV for Media Center.

An Internet Portal

If you are familiar with the term *portal*, you will quickly start to think of Online Spotlight as a very strict portal for Media Center. The only online content you can get to is the content chosen for you by Media Center.

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Online Spotlight provides the "news, sports, and weather" content of most portals, but adds music and video sections too. The Web content from Online Spotlight looks like Media Center while maintaining its own identity. Before visiting some of the content areas, let's look at how Online Spotlight works.

From the Media Center Start Screen, choose Online Spotlight. You see the menu shown in Figure 19-1. The screen contains sets of boxes covering the following major content areas:

- **Showcase:** New or featured sites are "showcased."
- **Music & Radio:** Features online music buying services and Internet radio stations.
- **Movies & TV:** Brings you to online movie viewing/rental sites and TV-specific content.
- **News & Sports:** Includes news headlines and stories and also sports sites where you can see sports highlights.
- **Lifestyle:** General interest content is featured.



Figure 19-1: The Online Spotlight menu.

The Online Spotlight menu features various content providers that have created online content designed to work specifically with Media Center and its TV-centric environment. Online Spotlight also allows for more content providers to be added at any time in the future. The content providers have been categorized by the topics listed above. Figure 19-2 shows content providers in the Movies & TV category.

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Figure 19-2: The Movies & TV category menu.

Using Online Spotlight

Because you will be going to Web sites, you need to be connected to the Internet to use Online Spotlight. If you are not connected, you will see a pop-up message telling you that you first must make a connection before visiting Online Spotlight sites.

If you are connected to the Internet, you can visit a featured site by selecting and clicking on it.

Note

Much of the media content you can reach from Online Spotlight works best with high-speed broadband Internet service. Downloading music, movies, or listening to streaming audio from Internet radio is not a great experience if you have a dial-up connection.

What happens next is that you view Web content formatted to work seamlessly in Media Center. For certain sites you may see a warning screen from Media Center telling you that the content may not display properly in Media Center. The warning menu contains the following message:

> "This Web site may not be designed for viewing from a distance or for remote control interaction. Do you want to view it in Media Center anyway or create a desktop shortcut to view it later?"

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You can choose to place a shortcut to it on your Windows XP desktop, view it now, or cancel the visit. Figure 19-3 shows the warning screen I got when downloading some of the Power Toys from Microsoft. In such cases you are about to visit a Web site that has not been formatted to work as a Media Center experience. Try going to the site. If you are using a computer monitor and you are sitting at a desk, you will not have any problems with it. If you are sitting on a couch viewing the screen with a TV, see how it looks. You may be able to use it, but chances are you will need to use a standard computer monitor to view it.



Figure 19-3: The warning you receive when visiting a site not formatted for Media Center.

Note

If you are using a TV display and end up at a Web page not formatted for Media Center, choose View Later to place a shortcut to it on the Windows XP desktop. Then you can revisit it when you are using computer monitor from Internet Explorer and Windows XP.

When you reach a Web site that is formatted to work with Media Center, you see a screen that has the same one-screen format and easy navigation as the rest of Media Center but with its own look and feel.

If you are used to navigating the applications in Media Center, you won't have any problems navigating the Web pages. Most are designed to work primarily with a remote control, and sometimes you will need to use the remote even if you are using a mouse and a keyboard. Each site has its own unique take on navigating Media Center. Some are more "remote control" friendly, others are more "mouse and keyboard" friendly.

Now that you know how to get to content and Web sites in Online Spotlight, let's take a look at some of the featured sites.

Sites Featured in Online Spotlight

Online Spotlight features a rotating list of featured content and downloads for you to access via the Internet. The Online Spotlight screen is separated into music, video, news, sports, tips, and download sections.

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Note

Because the choice of content providers changes occasionally, you may find new or different content providers than those listed here when you use Online Spotlight.

Music Sites

In addition to the music content that you have on your computer, you can use the music services featured in Online Spotlight to preview and purchase music and even view music videos. The music section also features Internet radio stations that you can add to your radio presets if you have an FM tuner card installed on your system.

NAPSTER

You can purchase music for downloads (99 cents for each song), view music videos, and listen to Napster Radio when you visit this site. Although there is a charge for music downloads, the streaming radio and videos are free (for Media Center users, but there may be a charge if you are visiting Napster via Windows XP and Internet Explorer). When you purchase music using Napster, it goes right into your music library and is ready for play. Highly visual and easy to navigate, the only caution is having your remote control at the ready. Napster navigation only uses keyboard actions or remote control actions, not pointing and clicking with the mouse.



Figure 19-4: Napster for music downloads, streaming audio, and music videos.

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LIVE 365

Visiting Live 365 brings the world of Internet radio to your Media Center experience. Unlike local radio broadcasts, Internet radio allows you to listen to stations from just about anywhere. It also allows you to find exactly the type of music you want, most of it without any commercials. More than 5,000 stations are featured and any of them can be established as a "preset" if you have a radio tuner card in your Media Center PC and can access the Radio menu.

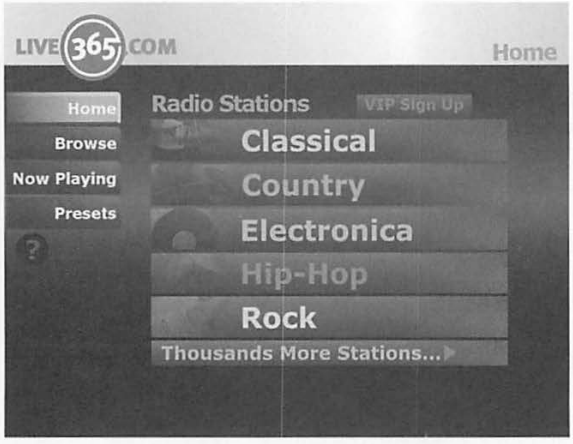


Figure 19-5: Live 365 features more than 5,000 Internet radio stations.

Movies

One of the most exciting developments in online media is the ability to rent full-length recent movie releases online and view them via your PC. Because Media Center allows you to view all media on a TV, that means you can save yourself a trip to the local video store to rent a movie and use Media Center instead. The following sections describe the two currently featured movie rental sites.

Note

Movie downloads take a long time, even with broadband.

MOVIELINK

You can rent movies for download to your Media Center PC from Movielink. Featuring the same new releases as any video store, you can view the movie as often as you want for a short period of time, and then it is no longer playable on your PC. A joint venture of MGM, Paramount Pictures, Sony Pictures Entertainment, Universal Studios, and Warner Bros. Studios, the site features movies from a wide range of genres. One caveat: Even with broadband connections, movie downloads take a few hours. After enough of the movie is downloaded for viewing, you can watch it while it downloads in the background.

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Figure 19-6: Movielink allows you to rent movies from the Internet.

CINEMANOW

Because no one movie rental source has all movies, CinemaNow is also available to rent movies from the Internet. Rentals are for unlimited viewing for a short period and then are no longer playable on your PC without renewing the rental. CinemaNow offers more than 1,200 movies, mostly recent releases, for rent and viewing on your Media Center PC. The user interface is very consistent with the navigation and ease-of-use of Media Center.



Figure 19-7: CinemaNow also allows you to rent movies from the Internet.

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News and Sports

People turn to their PC for news, sports, and weather information. As your "new TV," Media Center offers a good mix of such information from the content providers listed in the following sections.

MSN TV TODAY

One of the most established "Internet on TV" sources, MSN TV powers old "Web TV" boxes along with the current MSN TV service that displays Internet content on a TV. This works great for Media Center, and MSN TV Today, available from Online Spotlight, is a great source of current news, weather, and also financial information. It has streaming video news clips, weather forecasts, and news of categories such as business, technology, sports, entertainment, and travel. The site is perfect for TV viewing and use.

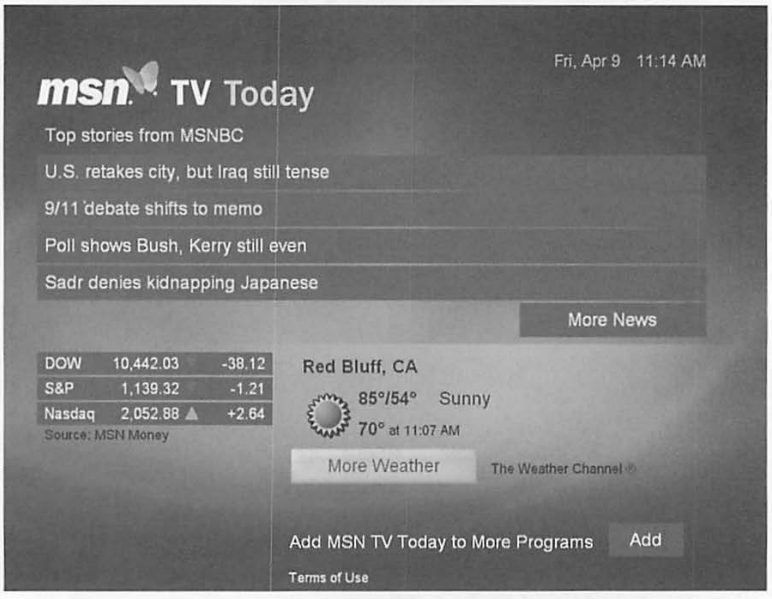


Figure 19-8: MSN TV Today features news, weather, business information, and more.

ESPN MOTION

Sports fans will like both the stats and the video highlights featured on ESPN Motion. A recent addition to Media Center and Online Spotlight, ESPN Motion has made a great transition to the TV-centric format. Before use, you must first "install" a feature to play the videos, but it is worth it to get the sports videos that would not be available except from the Internet and ESPN.

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Figure 19-9: ESPN Motion offers sports scores, stats, and videos.

Summary

Online Spotlight is the area of Media Center that allows you to get content from the Internet. Because Media Center has a very specific, TV-style user interface, Online Spotlight acts as a portal to Web sites that conform to the Media Center user interface. You must be connected to the Internet to use the area.

Online content for music, movies, news, sports and lifestyle content are available from Online Spotlight.

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Chapter 20

Final Thoughts about Media Center



At this point you should know all you need to know to get the most from your Media Center PC. If you are like many users, you still may ask, "Is this really good enough to replace all my other entertainment devices?" That's a great question.

This chapter takes looks at the potential Media Center holds within its design to be the replacement for other entertainment devices. It also looks at the limitations Media Center currently has.

Media Center PCs versus Dedicated Devices

If a Media Center PC is so good, then why do people still buy other "dedicated" entertainment devices like DVD recorders, DVD players, home stereos, and TiVo digital video recorders (DVRs)? Why aren't Media Center PCs the heart of any new entertainment system leaving Best Buy or Circuit City?

Dedicated devices still have a lot going for them. Here are just a few of the benefits of traditional consumer electronic devices:

- **Instant-On:** You just turn them on and you're watching TV—there's no booting-up.
- **Reliable:** They don't "crash" the way PCs do so often.
- **Easy to use:** Truthfully, you don't need a book like this to use them.

Dedicated devices such as TVs and DVD players have the perception of being easy to use and operate. Most people still think of computers as complicated devices that often are in control of them, not them in control of the PC.

Most of all, people don't think of using a computer to watch TV. Regardless of the cost, it's like offering any item to a person who doesn't want or need it. Even at a great price, they won't buy it. Changing a consumer habit is one of the greatest challenges possible to companies marketing any new type of product. Great features and value are just a small part of a value proposition to any consumer.

Cost Comparison

Earlier in the book we looked at how a Media Center PC actually costs less than a DVD recorder with a built-in hard drive using the TiVo service. The Media Center PC offered much more for the same

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price. That was comparing it to just one device. Table 20-1 gives you a detailed look at what it would cost to replicate all of the features of a Media Center PC using a mix of dedicated consumer electronic devices (based on prices at the time of writing this book).

Table 20-1 Comparison of Dedicated Devices versus Media Center PCs

Feature on a $1,000 Media Center PC	*Dedicated Device*	*Cost*
Record TV	TiVo	$200
Play DVDs	DVD Player	$80
Record DVDs	DVD Recorder/Player	$400
Play CDs and Radio	Home Stereo	$300
Play Pictures on TV	TV Picture Viewer/ Slideshow Player	$200
Burn Audio CDs	CD Recorder	$200
Access to Internet	MSN TV	$100
One Remote Control	Universal Remote Control	$50
Total Cost		**$1530 or more**

Without including the cost of all of the computing functions of a Media Center PC, and limiting it to a fair comparison of media playing and recording, it is clear that Media Center PCs offer more media value for a lower price than dedicated devices that together would perform the same functions.

When you consider all of the things a Media Center PC can do and the overall value it represents, you really have to think of the long-term success of Media Center PCs to be more about a change in the way things are done than simply a great gadget at a great price.

Changing Habits

It takes a long time to change a consumer habit. The amount of time it takes for any new concept or product category to become widely accepted by the mass market is about 10 years.

Think of DVDs. It took about 10 years from their introduction before they overtook VCRs. Audio CDs had the same 10-year cycle before they replaced audio cassettes. And it was even longer from the introduction of the personal computer before "everyone" had to have one.

Right now, HDTV (high-definition TV) is facing an equal challenge. Although clearly better than analog TV, HDTV has been slow to succeed not only because of the change in consumer habits, but because of spotty availability of programming and extremely high prices for new sets.

Will it take 10 years for Media Center PCs to catch on? In my opinion, no. As an extension of already adopted technologies (the personal computer and entertainment center), Media Center doesn't fall into the category of a new device, but it does represent a change of habit: using a PC in the living room.

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Media Center: A Work in Progress

Say "PC" and what do you think of? Home offices, spreadsheets, word processors, and the Internet.

Say "TV" and what do you think of? Living rooms, TV shows, news, sports, and weather.

The challenge is to get people to think of Media Center PCs as a single device that can do all of that in any of those rooms. It actually can do all of that, but there are a few things that need to happen before most people see it that way.

I think that it will take time and even more features before Media Center PCs are at the heart of home entertainment in most homes. Let's take a look at some things that need to happen next:

- **Instant-On:** When someone calls you and says "Turn on channel 7 right now!" you know that you can go to your TV, turn it on, and almost instantly see what they're talking about. Media Center PCs need to have that same "instant-on" performance level. Waiting for a computer to boot-up isn't a TV-like experience.
- **Reliability:** Although computers are really reliable on the hardware side, the operating system does sometimes crash. TVs, VCRs, and PVRs don't crash (they break, they don't crash). If you have scheduled a recording of your favorite TV show and the computer crashes and you don't even know it, you won't be relying on it in the future and you're back to your PVR or VCR. Media Center PCs simply can't crash and be expected to be reliable.
- **Easy-to-use:** Moving back and forth between Windows XP and Windows Media Player and setting up printers and configuring home networks; Yikes! That's not simple like taking a TV out of the box, connecting the cable, and turning it on to watch the game. To truly be a home media center Media Center PCs have to be able to be used and set up by anyone—not just PC-literate early adopters (like you and me).

Now, look at this list, and then go back to the first section of this chapter and look at the list about the advantages of dedicated consumer electronic devices.

It's the same list.

Perhaps that's why you don't see Media Center PCs in the TV department of Best Buy and Circuit City. Perhaps that's why they are still marketed mostly to computer users who truthfully are used to complexity, learning curves, crashes, and long waits in the use of programs.

Media Center PCs are a work in progress. The preceding items and even longer lists of similar improvements are certainly on the planning board of Microsoft and all of its hardware partners. In a move to making the PC an entertainment device, those companies are very aware of how consumer electronic devices are successful not just because of value and features, but also ease-of-use and reliability. Their goal is to make Media Center PCs that good. It will take time, but I am a believer. It will happen.

Overcoming Media Center Limitations

Let's take the three items listed earlier and see how you can overcome those limitations in the meantime until the systems themselves come up to par.

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Instant-On

It's true that you just don't turn on a Media Center PC and instantly get a TV picture. So, with a bit of logic and understanding of how PCs work, you can achieve a result that's pretty close to "instant-on."

- **Leave your computer on:** By leaving your computer in an "on" state, or in Standby mode, you will be able to quickly get TV programs when you want. Media Center PCs are built to "wake" from standby to record TV shows, so you really should never turn them off completely; if you regularly schedule shows to record, you should always put them in Standby mode anyway. It takes only a few seconds to wake from standby, which is almost the same amount of time it takes for most current TVs to come out of the power saver mode.
- **Don't exit Media Center:** Let Media Center run all the time your PC is on or in standby. Even if you are using Windows XP applications, having Media Center running and playing TV means that you are just one click away from TV viewing, listening to music, or accessing any of its media functions.

By going to the Power Options on the Windows XP Control Panel, you can set how long it takes before Media Center goes into Standby mode, and also make adjustments for hard drive spin down and the amount of time before the display goes into Standby mode. Figure 20-1 shows the Power Options from the Control Panel.

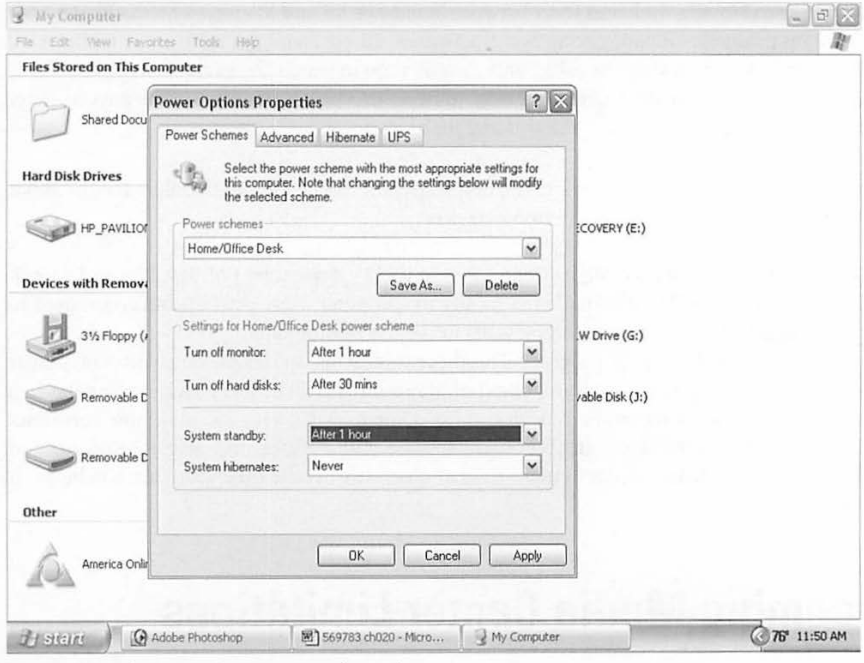


Figure 20-1: The Power Options control panel.

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By properly configuring your settings, you can keep Media Center handy at all times and also save power based upon how you use your Media Center PC and your TV viewing habits. Don't worry about recordings; as long as you are in the Standby mode, Media Center will wake your PC for the recording.

Reliability

Since most computer hardware is actually pretty reliable, you most likely will have computer crashes that are operating system or software-based. Although such crashes aren't caused by you, you can do some simple things to prevent them:

- **Identify problem routines or applications:** If your system hangs up or crashes every time you run a certain program, you may want to seriously consider stopping the use of the program. It may also be that programs that run well on their own tend to crash the computer when you run them at the same time as Media Center. This can happen when you are running Media Center and then go to Windows XP to run a video program that is trying to use the TV tuner card or devices that Media Center is using. Try to identify problem situations and avoid them. Sure, everything should work perfectly, but it doesn't. You can prevent many crashes with this approach.
- **Don't overload your PC:** Sometimes too many programs running at once causes slow performance or even a crash. Programs that run great on their own may tend to call on system routines and resources that other running programs are using, and things get very slow when the programs fight each other for resources. After you are through with non-Media Center applications, close them.
- **Optimize and clean up often:** Using the tools that came with Windows XP in the System Tools folder, optimize and defragment your hard drives and clean up your system files. Performing these tasks about every three months is a good practice to keep your PC running well.
- **Use Windows Update often:** Check periodically for updates to Windows XP and Media Center from the Microsoft Web site. Problems that happen to most people get reported and system upgrades eventually become available to solve them.

Ease of Use

Things are only hard to do when you don't know how to do them. The first time you do something is always harder than the second time. By reading this book you have a good head start in making your Media Center PC easy to use. It's experience and knowledge that is required since the hardware and software is still more complex than a TV.

By learning how to use Media Center and making all of the settings work the way you want, you will find it to be very easy to use. After the initial setup, it's an intuitive product that's really just "point and click" if you are still using a mouse, or "press" if you are using a remote control.

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Final Thoughts on Digital Entertainment

I used to think of entertainment as different sets of experiences. I would listen to music. I would watch a DVD. I would watch TV. I'd look at my picture scrapbook. Each was unique, and each required different devices and a knowledge of how to control them.

Owning a Media Center PC has changed all of that. All of those actions are now one. I use one device for all of them, and they are beginning to weave together in both function and my perception of entertainment. I am much more likely to jump from one to another than ever before. This has let me view more media when I want it than if I were using disparate devices.

I no longer think of watching TV as a time-based, linear experience. I record just about everything and watch it when I want, *not* when the networks tell me to. That in itself is priceless.

All my media is now just a click or two away. It's all available, for the first time, in one place. I love it.

Even better is the future. With more and more entertainment content coming from the Internet, the universe of what I can watch and listen to is growing. Just as the Internet opened up information in a way never seen before, it is doing the same thing for entertainment content. Media Center is a portal to that world—and the world of personal photographs, videos, and music that I have assembled and help define who I am.

Petitioner Disney Ex-1042, 0335

Part VII

Appendixes

Appendix A
Media Center PC Manufacturers

Appendix B
Media Center PC Applications and Devices

Appendix C
Media Center PC Reference Sources

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Appendix A

Media Center PC Manufacturers



The following are manufacturers who build Media Center PCs.

ABS Computer Technologies
(562) 695-8823
www.abspc.com

CyberPower
(626) 813-7730
www.cyberpowersystem.com

Dell Inc.
(800) 915-3355
www.dell.com

Gateway
(800) 369-1409
www.gateway.com

Hewlett-Packard
(888) 999-4747
www.hp.com

Howard Computers
(888) 912-3151
www.howardcomputers.com

iBuyPower
(888) 462-3899
www.ibuypower.com

Mind Computer Products (Canada)
(204) 783-2001
www.mind.ca

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Niveus Media, Inc.
(866) 258-2929
www.niveusmedia.com

Northgate
(800) 536-8900
www.northgate.com

Sony
(877) 865-7669
www.sonystyle.com

SysteMax
(800) 62-6622
www.systemax.com

Tagar Systems (Canada)
(866) 279-9917
www.tagarsystems.com

Toshiba
(800) 316-0920
www.shoptoshiba.com

Touch Systems (Canada)
(905) 415-1166
www.touch-systems.ca

ViewSonic
(888) 881-8781
www.viewsonic.com

ZT Group
(866) 984-7687
www.ztgroup.com

Microsoft maintains a list of manufacturers of Media Center PCs, and names are added to the list on an ongoing basis. Be sure to visit the following Web site for the latest updates:

www.microsoft.com/windowsxp/mediacenter/partners/manufacturers.asp

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Appendix B

Media Center PC Applications and Devices



The following are companies that make add-on programs and devices for Media Center PCs.

ADD-ON PROGRAMS

ArcSoft
DVD burning software
www.arcsoft.com

CinemaNow
Online video rentals
www.cinemanow.com

EastSleepMusic Corporation
Karaoke software
www.mykaraokemce.com

ESPN.com
Online sports information service
www.espn.com

Lantronix
Message center software
www.lantronix.com

Live365, Inc.
Online radio service
www.live365.com

Movielink
Online movie rentals
www.movielink.com

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MSN TV
Online news and weather service
www.msntv.com

Music Brigade
Online music video service
www.musicbrigade.com

MusicMatch
Online music store
www.musicmatch.com

Muvee Technologies
Movie creation software
www.muvee.com

Napster
Online music store
www.napster.com

Ofoto (Eastman Kodak)
Online photo service
www.ofoto.com

Sonic
DVD burning software
www.sonic.com

WildTangent.com
Game software
www.wildtangent.com

ADD-ON HARDWARE SPECIFICALLY FOR MEDIA CENTER

Gyration, Inc.
Media Center wireless keyboard and mouse/pointing devices
www.gyration.com

Microsoft maintains a list of manufacturers of Media Center PC software and hardware suppliers, and names are added to the list on an ongoing basis. Be sure to visit the following Web site for the latest updates:

```
www.microsoft.com/windowsxp/mediacenter/partners/default.asp
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Appendix C

Media Center PC Reference Sources



Keep up-to-date on developments with Media Center by visiting Microsoft's Media Center Web site and user group Web sites devoted to the topic. You may also want to read some of the other books on the subject too.

WEB SITES

The following are Web sites that have forums, resources, and downloads for Media Center PCs.

The Green Button
Media Center PC user groups, forums, links to downloads and general information.
`www.thegreenbutton.com`

Microsoft
The official Microsoft Media Center Edition Web page.
`www.microsoft.com/windowsxp/mediacenter/default.asp`

xpMCE.com
Media Center PC user groups, forums, links to downloads, general information, and news.
`www.xpmce.com`

BOOKS

Windows XP Media Center Edition 2004 PC For Dummies
by Danny Briere, Pat Hurley
Paperback, November 2003
US $21.99
`www.wiley.com`

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