ComputorEdge™ Online — 12/04/09

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MP3 Is Our Music

MP3 players let you carry thousands of songs wherever you go in the palm of your hand. Here's a look at how to work with MP3 files and MP3 players.

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Computer and Internet tips, plus comments on the articles and columns.
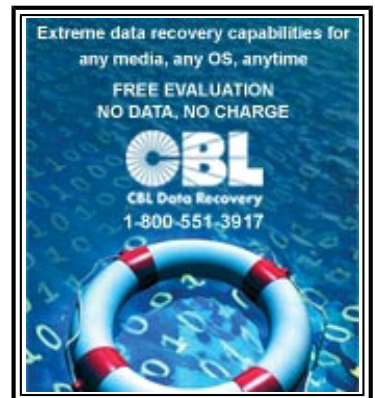"Microsoft Security Essentials and AVG," "SyncToy for Backup," "IRS Phishing Scam," "More Characters," "Runtime Revolution?"

Digital Dave

"Digital Dave answers your tech questions." by *Digital Dave*

A reader is receiving a message about codecs when he tries to copy music files; a Hotmail e-mail account is being unreliable; a reader wants to understand the Virtual Wi-Fi feature in Windows 7.

Dear Digital Dave,

Ey op Dave (that's Yorkshire for Hello Dave)!

I can download music to my desktop OK and burn songs onto CDs OK, but when I try to copy the music from my files to something like adding a soundtrack to Adobe Photoshop Elements or ProShow Gold, I keep getting a message that says I need a compressor/decompresser (codec) installed. What is this and where can I get it ?

Alan
Yorkshire, England

Dear Alan,

The term "codec" is a shortening of the words "coder" and "decoder." A true codec is in your digital cellular phone, where your voice is encoded when you speak into a digital bit stream that is sent over the air, and the other party's digital bit stream is decoded into their voice when you listen.

In the case of audio and video "codecs," it is really a decoder and decompression software we are talking about. It takes the digital data downloaded from the Internet, and decodes and decompresses it into a video bit stream that can be displayed on your screen.

The different types of codecs are usually identified by the file extension added to the filename. In many cases, programs will only operate with specific file types (codecs). In those situations you will need to convert the file into the proper format(s) for the program. There are many file-conversions programs available, many of them free. One quick way to check compatible file types is to compare the file extension (the portion of the name after the dot, i.e. ".mp3") with those extensions opened by the program (click Open from the File menu and look at the file types in the drop-down menu below the filename field).

In other cases, you may need to install the codec required to read your file. Download the codecs from a reliable source such as the software's manufacturer's Web site or CNET's Download.com (Windows Essentials Media Codec Pack 2.3d (*download.cnet.com/Windows-Essentials-Media-Codec-Pack/3000-13632_4-10662709.html*), Windows 7 Codec Pack 2.2 (*download.cnet.com/Windows-7-Codec-Pack/3000-13632_4-10965840.html*)). There are too many cases where questionable Web sites have used codec (and driver) downloads to install malware.

Digital Dave

Dear Digital Dave,

My Hotmail account has been skipping messages sent from my contacts. I found out by receiving messages from other contacts that include the threads of prior conversations in which they register a copy to my Hotmail account, but which I had not received. Is there any troubleshooting guide for a problem like this?

JJ Herrera
San Diego, CA

Dear JJ,

Join the club of people who have noticed problems with Hotmail. I been informed that of all the thousands of e-mails *ComputorEdge* subscriptions (*webserver.computoredge.com/subscript/subscriptlist.mvc*) sends out each week, Hotmail is the service most likely to bounce back the e-mails for no apparent reason. That means those unlucky people will not receive that particular issue. It is apparently a random problem, just as yours is. Random problems are the most difficult to resolve because they cannot be reliably repeated.

To help deal with the issue of lost e-mail, as a matter of course, I attempt to respond to every one that I receive from a friend or associate with at least an acknowledgment that I have their message at hand. (Got it! Thanks.) That way, if they don't hear back (and they know that I usually respond), they can guess that the message didn't get through. Too many people don't respond to e-mail, leaving the sender to wonder. I know I always appreciate a short response. (Roger, out!)

Digital Dave

Dear Digital Dave,

Love your column and have read it for years—ever since I lived in San Diego. With that said:

What's this about Virtual Wi-Fi being included with Windows 7? From Googling my brains out about it, it looks as though Microsoft has included in the released versions of Win 7 what amounts to a (virtual) wireless router—run apparently by Connectify.me, which I never heard of before.

I can't figure out whether this means my laptop could serve as a hot spot (which it currently does running Vista and a Linksys wireless router) even after I were to upgrade to Win 7 home edition, throw out the router, and connect to my cable modem via my current Ethernet cable?

Or, whether it works only if I kept my current router and connected to it only *wirelessly, then provided Wi-Fi to others in range. (Current range of about 100 feet, or vastly reduced range of only a few feet? Which, of course, my wireless router can already do.)*

Yeah, I know this stuff is new, but perhaps you, and some readers, could provide some mutually useful feedback. If this works effectively, it could be a good selling point for Win 7 (though of course Vista is the *strongest selling point for that program they could have devised).*

Steve Johnson
Camp Verde, AZ

Dear Steve,

You're right. Apparently, Microsoft has been working on the Virtual Wi-Fi capability since 2002. It has been included in Windows 7, although it has not been highlighted due to a lack of drivers. The Virtual Wi-Fi capability is just now starting to get significant attention.

Most of the information I've seen uses the command prompt to set up the feature; however, the free program you mentioned, Connectify (*www.connectify.me/*), appears to offer a user-friendly approach to creating a Wi-Fi extension with your Windows 7 computer. (I'm not sure if Virtual Wi-Fi is available in all versions of Windows 7, although it was not included in the release candidate for Win 7.) If you have the Virtual Wi-Fi capability in your computer, it should appear as a virtual device that appears in the "Network Connections Folder" as "Wireless Network Connection 2."

One of the strengths of Virtual Wi-Fi is that only one wireless card is required in the host computer. There are a few primary uses for this technology. One would be to take a hardwired Ethernet connection and tether another Wi-Fi device (cell phone or computer) to the Internet connection. Another would be to use the Virtual Wi-Fi to share a limited (paid) Wi-Fi connection with other nearby computers and devices. However, I would not consider this as a replacement for your wireless network router.

Routers are very efficient at what they do, and although you can turn any computer into a router, it will introduce

more complications and problems than will be saved by eliminating your network router. When you can get an excellent wireless router that will add security to your network at a very low price, it seems silly to consider replacing it with a feature on a computer. I could see using the Virtual Wi-Fi to host other devices at locations such as those described above, but not in your home or office settings When you use your computer to host Virtual Wi-Fi, you're introducing additional security issues to your computer that must be addressed.

Another problem with using your computer, especially a laptop, to host Wi-Fi is the question of range. Wireless routers have external antennas and operate at optimum power. The wireless network cards are not designed to transmit as strong of a signal. The connectivity range of a wireless setup is a combination of the capability of the wireless router and the wireless card. The extra capability of the router allows the computer's network card to operate at a lower level while maintaining a good connection. If you add an external wireless device (USB) with an antenna and pretty good power, then you may get a decent range for connecting other devices. In most cases, it won't be worth the effort when a router can do the job.

I would like to hear from others who have used the Virtual Wi-Fi setup.

Digital Dave

The Nuts and Bolts of MP3 Players

"Personal music player technology has made some huge advancements." by Pete Choppin

MP3 players let you carry thousands of songs wherever you go in the palm of your hand, organize them into playlists, and then have the ability to play your songs on any number of devices. Here's a look at some popular MP3 players.

Of the recent evolutions of music formats—from the 8-track tapes to vinyl records to CDs—none of the earlier music formats provide the convenience and control that MP3 players deliver. When you can carry thousands of songs wherever you go in the palm of your hand, organize them into playlists, and then have the ability to play your songs on any number of devices, it is clear that personal music player technology has made some huge advancements.

Think of all that stored music, and the MP3 player itself, weighing in at less than one ounce. Portability, in large measure, plays a huge part in the popularity of the MP3, considering the ease of transportation in comparison to a CD player and CD storage—and that's in addition to the ability of some devices to provide additional technology, such as video and photo viewing, calendar functions, and even cell phone and Internet service.

In this article, we'll be discussing the technology inside MP3 players and the different types of players available.

The MP3 File Format

"David has no music to play on his iPod but he doesn't want to look out of place when jogging."

In the late 1990s, when file-swapping services and the first portable MP3 players made their debut, the MP3 file format revolutionized music. MP3, or MPEG Audio Layer III, is one method for compressing audio files. MPEG is the acronym for Moving Picture Experts Group, a group that has developed compression systems for video data, including those for DVD movies, HDTV broadcasts and digital satellite systems.

Figure 1 - MP3 Music Encoding

Using the MP3 compression system reduces the number of bytes in a song, while retaining sound that is near-CD quality. Anytime you compress a song, you will lose some of its quality, which is the trade-off for the ability to carry more music files in a smaller storage system. A smaller file size also allows the song to be downloaded from the Internet faster.

Consider that an average song is about four minutes long. On a CD, that song uses about 40MB, but uses only 4MB if compressed through the MP3 format. On average, 64MB of storage space equals an hour of music. A music listener who has an MP3 player with 1GB of storage space can carry about 240 songs or the equivalent of about 20 CDs. Songs stored on traditional CDs are already decompressed, so it takes more CDs to store the same amount of songs. (Some CDs support MP3 files.)

Although MP3 is perhaps the most well-known file format, there are other file formats that can be played on MP3 players. While most MP3 players can support multiple formats, not all players support the same formats. Among these are WMA (Windows Media Audio), WAV (Waveform Audio), MIDI (Music Instrument Digital Interface), AAC (Advanced Audio Coding), ASF (Advanced Streaming Format), and ATRAC (Sony's Adaptive Transform Acoustic Coding 3).

Inside the Player

Unlike earlier forms of music players that required moving parts to read encoded data on a tape or CD, MP3 players use solid-state memory. An MP3 player is no more than a data-storage device with an embedded software application that allows users to transfer MP3 files to the player. MP3 players also include utilities for copying music from the radio, CDs or Web sites, and the ability to organize and create custom lists of songs in the order you want to hear them. This list of songs is called a playlist .

Specific components may vary, but the basic parts of a typical MP3 player consists of a data port, memory, microprocessor, digital signal processor (DSP), display, playback controls, audio port, amplifier and power supply.

Figure 2 - Inside an iPod Touch

The MP3 player is a combination of many technologies. Alone, none of its components are revolutionary, but together they create an unprecedented consumer product.

The player plugs into your computer's USB port, FireWire port or parallel port to transfer data. USB-based players transfer data many times faster than those that use the parallel port. The MP3 files are saved in the player's memory.

The type of memory MP3 players use is solid-state memory. The advantage of solid-state memory is that there are no moving parts, which means better reliability and no skips in the music. Some players may also contain tiny hard disk drives, which can store 10 to 150 times more than Flash memory devices.

In addition to storing music, the MP3 player must play music and allow the user to hear the songs played. To do this, the player:

1. Pulls the song from its memory.
2. Decompresses the MP3 encoding, through DPS, via an algorithm or formula.
3. Runs the decompressed bytes through a digital-to-analog converter into sound waves.
4. Amplifies the analog signal, allowing the song to be heard.

All of the portable MP3 players are battery-powered. Most use a rechargeable internal lithium battery and last for approximately 10 to 24 hours on a single charge. Many of the players also have AC adapters so they can be plugged into a normal electrical outlet, and some even offer DC adapters for use in a car.

Types of MP3 Players

MP3 players are as varied as the people who buy them. Choice is based on several factors, including how you plan to use it, the amount of music you want to carry in your MP3 player and how much you are prepared to pay. Let's take a look at the four basic types of MP3 players.

Flash Memory Players

The flash memory MP3 player is the smallest and lightest, and typically stores fewer songs than hard drive players. Because it's small and contains no moving parts, it's ideal for joggers, bikers or anyone on the move, and with some models boasting up to 8GB of storage (2,000 songs) and other models offering video and photo capability, it also appeals to the multimedia aficionado. Its batteries can last up to 24 hours.

Hard Drive and Mini-Hard Drive Players

Hard drive players are larger and heavier than flash memory players and offer considerably more storage. (The Apple iPod holds up to 80GB.)

For those looking for a player that can contain their entire music collection (up to 20,000 songs), photographs, data and video, and allow podcast recording, the hard drive is best. However, these features and the hard drive consume more power, with some batteries lasting eight to 20 hours for music playback and up to six hours for video playback. The players include moving parts, which may skip. However, some players have anti-shock buffers and/or anti-skip protection.

Smaller in size and internal storage capacity, miniature-hard drive players are lighter than traditional hard drive players, but contain less memory—usually up to 8GB. They, too, contain moving parts.

MP3 CD Players and MiniDisc MP3 Players

There is a breed of CD players available that plays MP3 and other digital files. These MP3 files are burned to CD-R/RW discs from your old CD collection and used in the MP3 CD player. A CD can hold about 10 hours of music. A CD burner is necessary for those buying an MP3 CD player. The MP3 CD player is cheaper than the flash memory and hard drive memory players, but may skip when jostled. They are also much larger in size than their digital counterparts.

-For those who appreciate MiniDisc technology, there's Sony's MiniDisc Walkman digital music player. This player supports the trademark Sony file format codec ATRAC3—but it also supports MP3, WMA and WAV formats. And the multitasking doesn't stop there. Sony reports that the 1GB Hi-MD discs can also store and transfer loads of PC data files (think PowerPoint presentations, spreadsheets, etc.). The discs retail for less than $10, store up to 600 songs and are re-recordable. Depending on the model, users can expect anywhere from 30-plus hours of playtime from just one AA battery.

The Hybrid Players

MP3 is no longer just a stand-alone technology. Technology companies are now offering MP3 capability in other consumer products, including satellite radios, personal digital assistants, DVD players, sunglasses, swim goggles and even a combination Swiss Army Knife-MP3 player. Most notably, the iPhone from Apple crosses a cell phone with an iPod and Web browser, along with a variety of other features.

<center>*   *   *</center>

Digital music has been around now for many years, and it is clear that the digital media players are only going to increase in capacity, speed and features.

Pete Choppin has worked in the computer and IT industry for 13 years. He currently works as a network and systems administrator for a company called Albion based in Clearfield, Utah. His interests include cooking, sci-fi, computers and technology, and web design—a semi-professional endeavor, having designed Web sites in the dental field, e-commerce businesses, and for the Boy Scouts of America.Pete also contributes regularly to Ptolemy's Tribute (*ptolemystribute.blogspot. com*)—a blog which covers political and technical topics and issues. Pete has been a devout reader of *ComputorEdge* since 1990. He has contributed to articles and responded to topics on *ComputorEdge*. He can be contacted at *pchoppin@comcast.net*

MP3 File Utilities

"Get your MP3 collection in optimum shape." by Michael J. Ross

> In this article, we will learn how to fix typical problems plaguing MP3 files with some Windows programs, so you can get your MP3 collection ship-shape.

There are many different file formats that can be used for storing music and other audio electronically in a computer file. Some of them are compressed, while others are not. Some of the compressed formats are lossy (which means that some of the audio quality is intentionally discarded in order to further reduce the file size), while others are not. That last category naturally became the favorite among people sharing music files over the Internet—using peer-to-peer networks, such as Napster—to speed file transfer over slow connections (modems, for many suffering Internet fans).

Among the lossy compressed audio formats, there were initially some strong contenders for the throne, including WMA (Windows Media Audio). But it took little time for the winner to emerge—MP3. It is both the common name and the file extension, and is short for "MPEG-1 Audio Layer 3." It was designed by the Moving Picture Experts Group (*www. chiariglione.org/mpeg/*) as part of its MPEG-1 standard. MP3 quickly became the de facto standard used by audio playback and recording ("ripping") software, as people throughout the developed world began to enjoy iPods and other portable music players, as well as the convenience of playing music from their computers, and no longer having to locate and load compact discs, or worry about those CDs getting scratched, broken, or warped.

As a consequence of countless music aficionados sharing music files over the Internet, these people ended up with sometimes enormous collections of files, many of which are poorly ripped from CDs. Specifically, the MP3 files can have all sorts of problems. Some of them are not easily fixable by the recipient of any given file. For instance, skips and pops in the music resulting from scratches on the source CD, are practically impossible for the typical computer user, who does not have the technology or know-how to fix such glitches.

On the other hand, there are problems that just about anyone can resolve: a single composition split into multiple tracks; missing ID3 tags (more on that in a moment); and music that was recorded at a suboptimal volume or has unwanted material at the beginning or end. In this article, we will learn how to fix all three of those types of problems with some Windows programs, so you can get your MP3 collection ship-shape.

By the way, adding to the alphabet soup of acronyms, ID3 (*www.id3.org/*) is a standard tagging format for audio files, and allows you to embed information about a song right into the file itself. That information can later be used by audio players and music-organizer applications.
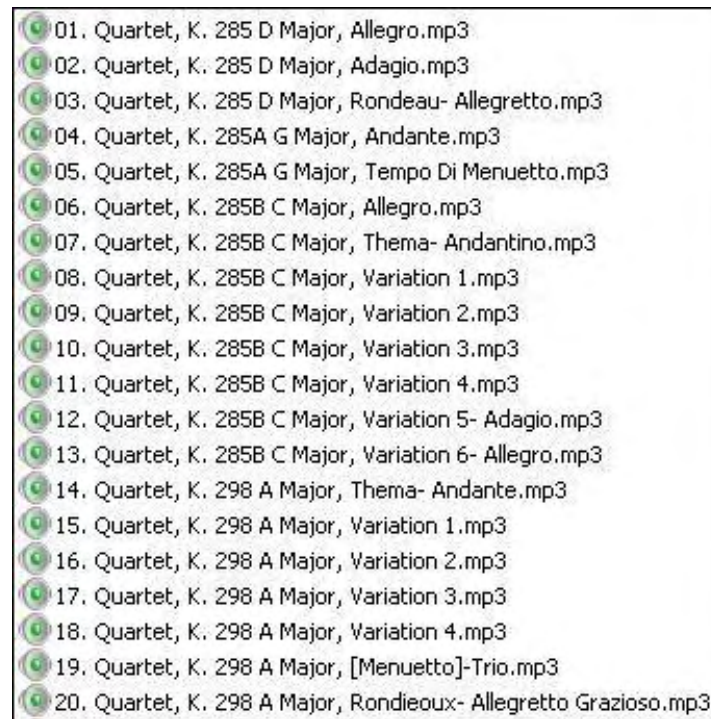
Figure 1. MP3 files.

For illustrative purposes, we will use 20 tracks of some classical music (Mozart quartets).

Come Together Right Now

In the figure above, we see that the first three tracks comprise a single composition. They are stored in three separate MP3 files, only because that's how they were engineered and released on the CD. But you would not listen to that composition by starting at the second or third movement; rather, you would always start at the beginning, with the first movement. So it makes no sense to keep the three movements in separate files. This becomes especially problematic if you have your music player set to "random shuffle," because then it is highly unlikely that the three movements would be played continuously, in the correct order.

What we want to do is somehow combine those three MP3 files into a single one. Fortunately, there is an application that makes it possible—AlbumWrap, developed by Infamus Software. Even though the company's Web site appears to be having technical difficulties, as of this writing, the software can be downloaded from a number of different sources, including Softpedia (*www.softpedia.com/get/Multimedia/Audio/Other-AUDIO-Tools/AlbumWrap.shtml*). AlbumWrap is a utility for wrapping multiple MP3 files into a single one, and was originally developed for creating entire albums from individual tracks. (Note that this program is not the same as AlbumWrap Extractor.) It is shareware, and the cost is only $15.

To install AlbumWrap, you do not have to run any installation program. Simply place the executable file into its own directory, such as C:*bckslsh*Program Files*bckslsh*AlbumWrap. If you find yourself using it frequently, you can right-click on the file within Windows Explorer, create a shortcut to it, and drag that shortcut onto your Start menu. When you first fire up the program, you will see a welcome screen.

Figure 2. AlbumWrap welcome screen.

After you click the Start! button, you will be presented with a screen containing no tracks.

Figure 3. AlbumWrap start screen.

Then click on the Add Track button, and choose the first track that you wish to wrap into a combined one. In our example, that would be the file "01. Quartet, K. 285 D Major, Allegro.mp3." Continue that process for the remaining tracks.

Figure 4. AlbumWrap tracks added.

When you have finished adding all of the tracks that you want, click the Make Album button, and the program will prompt you for some basic tag-labeling information.
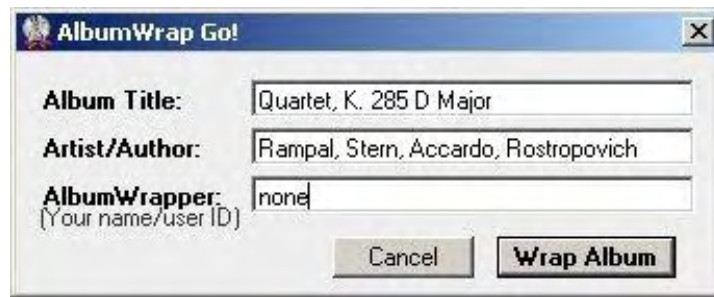
Figure 5. AlbumWrap ID3 tags.

Click the Wrap Album button, and save it to the desired location on your hard drive. AlbumWrap creates a combined MP3 file, consisting of all of the individual tracks, without affecting any of those tracks on disk.

Tagging Me Softly

So now you have a single MP3 file that contains all of the individual tracks of the composition. But when you play that file in your favorite audio player, it will only display the basic information that you set using AlbumWrap. You probably will want to add values for all of the other ID3 tags. There are innumerable tagging programs available, with varying capabilities and prices. But for basic tagging purposes, just about any one of them will do.

In our example, we will use Taggin' MP3 (*www.lazorsoftware.com/lazorsoft/tagginmp3.php*), from Lazor Software (*www. lazorsoftware.com/*). Even though the program would certainly benefit from improvements to its user interface, it tends to be easier for people to learn how to use, compared to many of the newer applications, which can be overwhelming. Another advantage is that it is completely free.

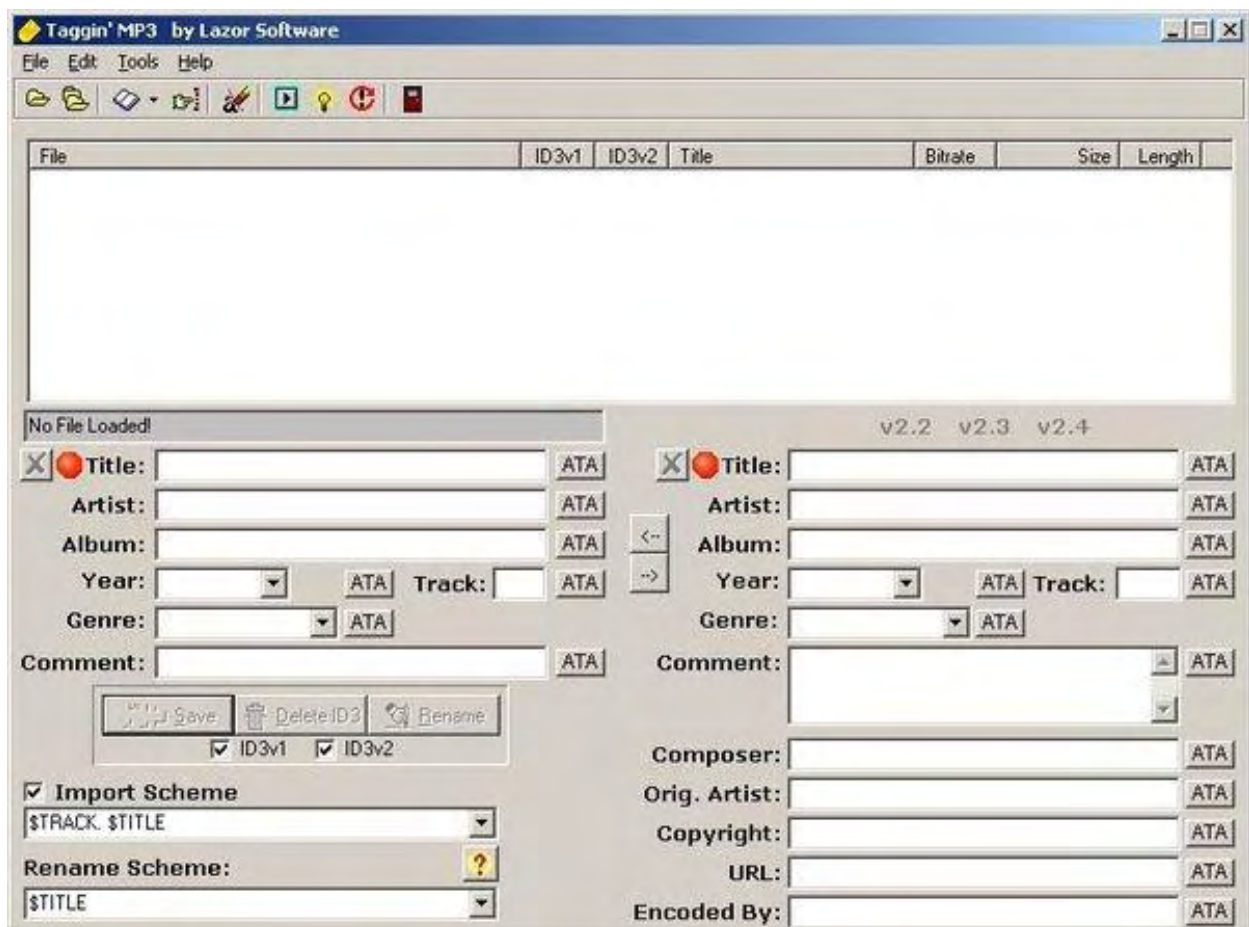After installing and first starting the program, you will see the main screen.

Figure 6. Taggin' MP3 main screen empty.

In most cases, you will be adding or modifying tags for all of the MP3 files in a given folder. So click on the first yellow icon in the toolbar, which is the same as choosing "Add Files..." from the Files menu.
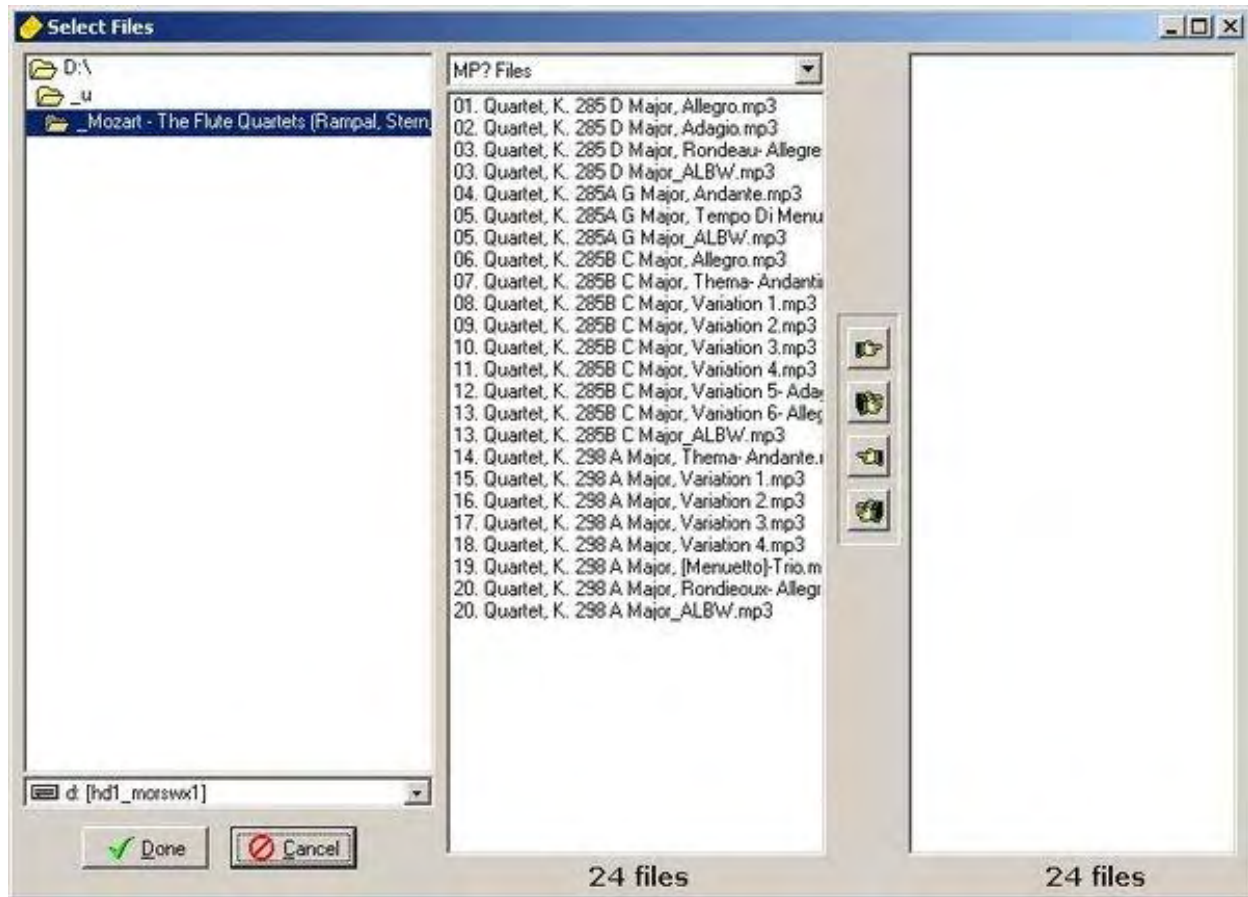

Figure 7. Taggin' MP3 select files start.

Double-click on the folder in order to display the folder's files in the panel to the right of it. Note that single-clicking the folder is not sufficient. This is one of several flaws in the program's interface.

When the files are displayed, you can move all of them over into the rightmost panel by simply clicking on the icon with multiple hands pointing to the right. To work with individual files from a list, hold down your Control key and click on each file; then click the single-hand icon.

Figure 8. Taggin' MP3 select files finish.
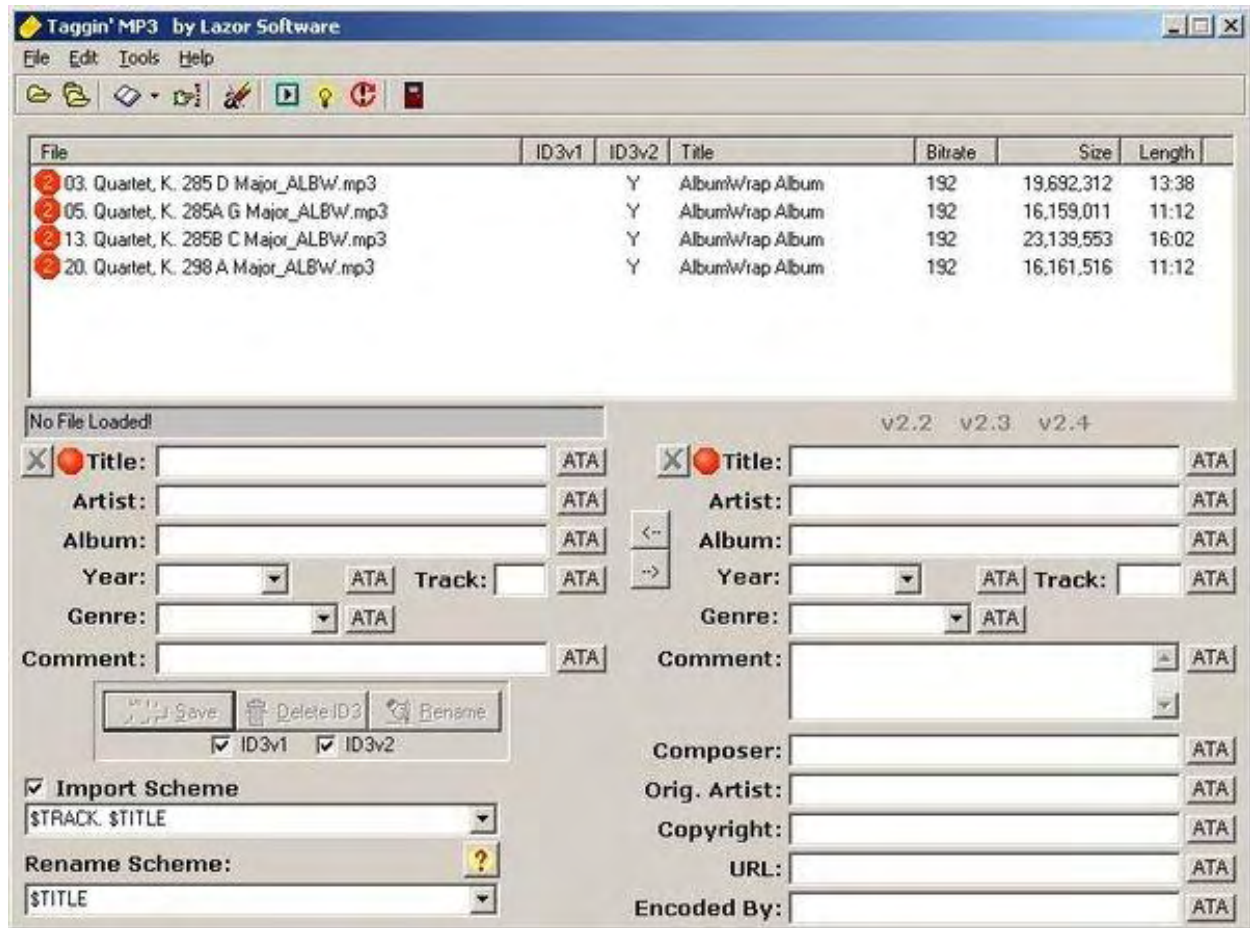
Finally, click the Done button.

Figure 9. Taggin' MP3 main screen full.

Now you are back to the main screen, and you can click on one of the tracks, and begin editing the ID3 tags, all of which are pretty obvious.
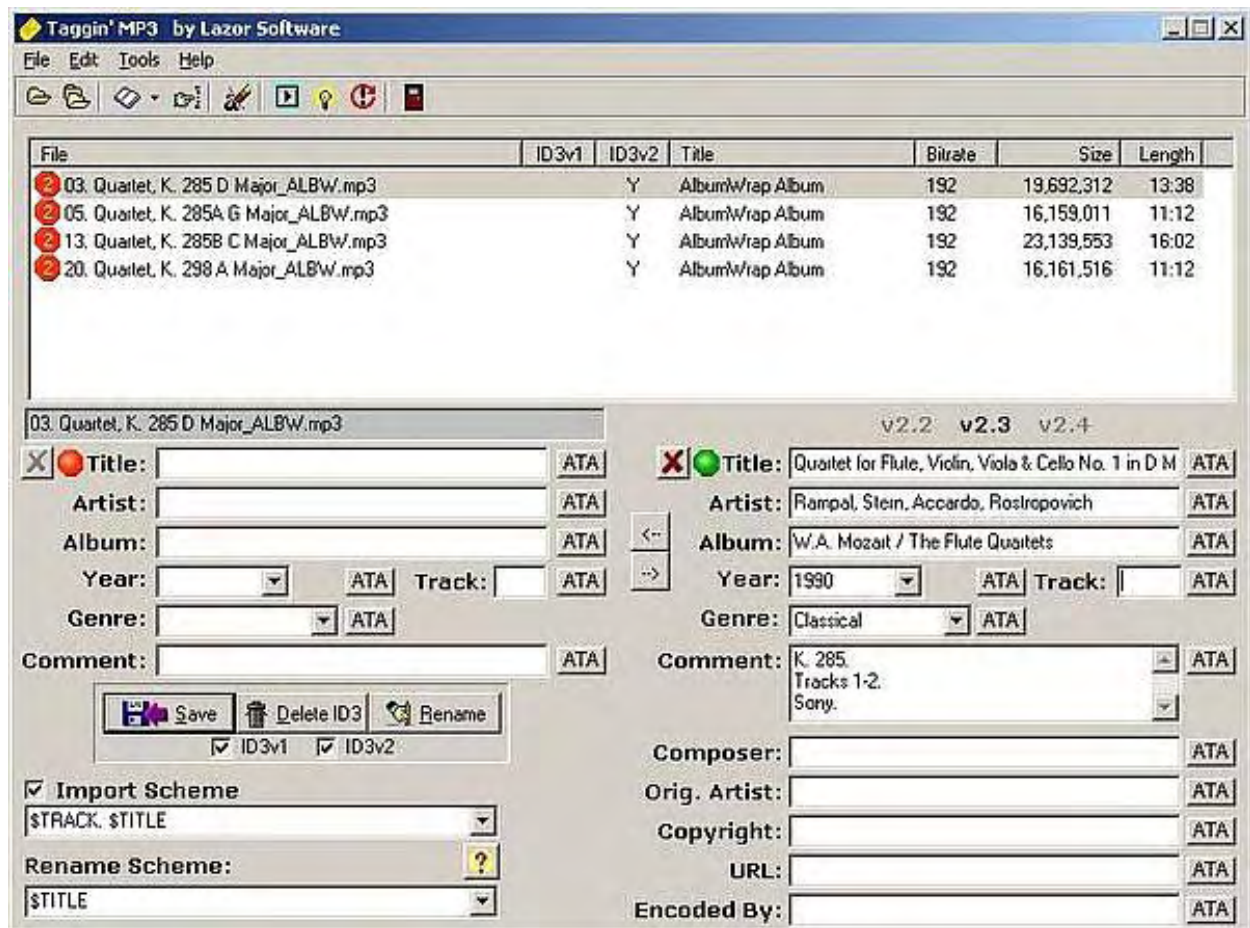
Figure 10. Taggin' MP3 main screen ID3 tags.

In the figure above, we see an example of ID3 version 2.3 tags entered, and none for version 2.2.

Trim the Fat

Now that your individual tracks have been combined into complete compositions (if needed), and the MP3 files have been tagged, it is time to trim away any unwanted material from the beginning and/or end of each MP3 file. This may consist of dead space, after the artists have faded out. Or it could be several minutes of applause after the last song in a live concert.

The program we will be using is appropriately named mp3Trim (*www.mptrim.com/*). The free version has some restrictions, and the more advanced versions—PE and Pro—offer extended file support and additional features. The user interface is fairly straightforward:
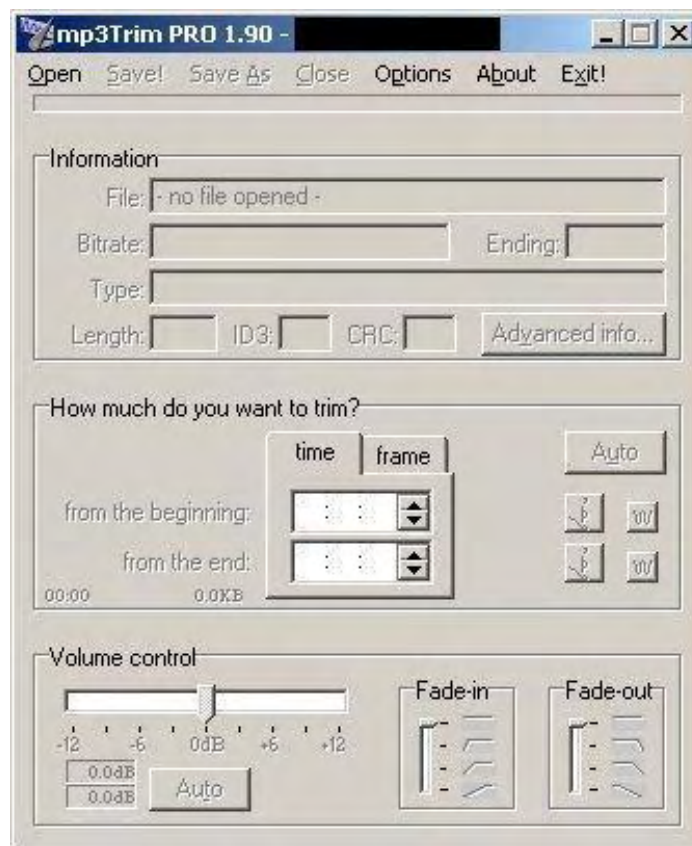
Figure 11. mp3Trim empty.

Click the Open button, locate the MP3 file that you want to modify, and open it.
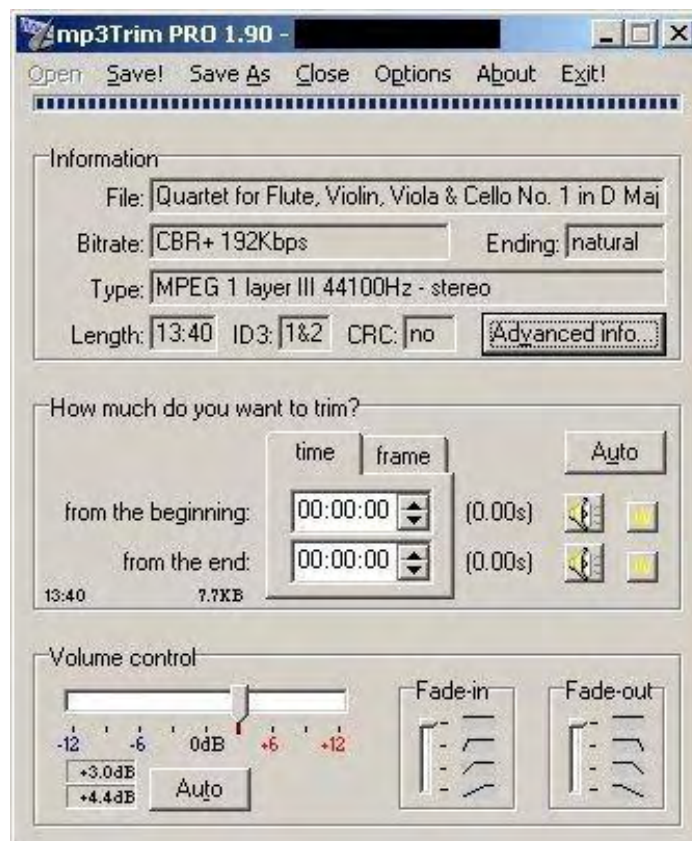

Figure 12. mp3Trim track loaded.

The volume control slider, at the bottom of the screen, shows you how much the volume will be increased or decreased when

you save the file. The panel above it is where you can listen to the beginning and end of the music, and specify the number of seconds to trim away. You can also click the Auto button to have mp3Trim take its best guess—which oftentimes is right on the money, and other times is way off.

If there is a frame header missing from the MP3 file, the program will give you a warning.
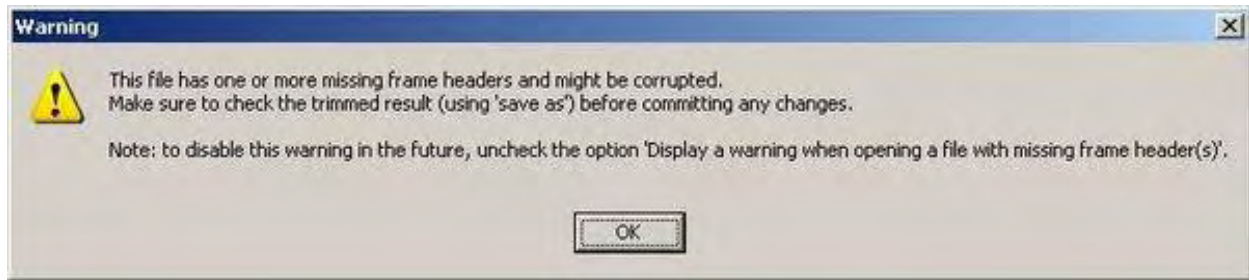
Figure 13. mp3Trim warning.

Usually, you can proceed with confidence. But it never hurts to do a Save As to a differently named file, and listen to it first to make sure that the saved version is no worse than the original one.

With these three tools at your disposal, you should have no difficulty in working with all of the music you have saved in MP3 format.

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Michael J. Ross is a Web developer (*www.ross.ws*), writer, and freelance editor. He creates Web sites that help entrepreneurs turn their ideas into profitable online businesses.

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Windows Tips and Tricks: Another Handy Free Windows Utility

"SyncToy for Easy Synchronization" by Jack Dunning

If you have the Home version of Windows Vista or Windows 7 (without the full featured Windows Sync Center), or Windows XP, then SyncToy could be a useful solution for many of your sharing and backup problems.

In a recent Edgeword, "A Review of Windows Data-Backup Tools," I went over the various ways I had previously covered in ComputorEdge how someone could implement a backup system in Windows. I received the following response from Ron Cerrato:

*I'm surprised you did not mention Microsoft's free SyncToy (*www.microsoft.com/downloads/details.aspx?familyid=c26efa36-98e0-4ee9-a7c5-98d0592d8c52&displaylang=en*). It's not really about syncing, and it certainly is no toy. It allows you to set up a backup file-and-folder tree structure with a few useful options. I set it up to mirror selected folders and files on my computer to an external drive. In subsequent runs it only copies changes since the last backup. You can view the backup at any time since they are not hidden in a blob. You can even move files out of the backup for better organization while deleting them from your computer, without modifying your backup arrangement.*

Ron was right to point this out. I think that I had run across the name SyncToy (*www.microsoft.com/downloads/details.aspx?familyid=c26efa36-98e0-4ee9-a7c5-98d0592d8c52&displaylang=en*) before, but I had never explored it. It is listed as part of Microsoft PowerToys for Windows XP (*www.microsoft.com/windowsxp/downloads/powertoys/xppowertoys.mspx*). I had always assumed (as the page indicates) that these were only tools for Windows XP. (Actually most of them are XP only, but SyncToy is an exception.) I'm certainly glad that Ron brought it to my attention because it resolves one of the issues that I've had with the Home version of both Windows Vista and Windows 7—there is no sync program available for backing up to network computers and network drives. You can use Sync Center to sync Windows Media Center with external devices, but unless you have the Business, Professional, or Ultimate version of Windows 7 or Vista, it doesn't have the flexibility to sync with network drives and other networked computers. SyncToy, which will run on any of the versions of Windows since XP, solves this problem.

The idea behind a sync program is to set up a pair of devices (computer and MP3 player, two computers, computer and flash drive or network drive) that will mirror the files on each other. This will both give a backup of the files and allow editing and changes to be made on either system. When the sync system is run, all changes will be updated on both sides. If there are conflicts (two matching files have both changed since last update), then they will be highlighted for resolution.

I was anxious to give SyncToy a try, so I downloaded the 64-bit version for my Home Premium Vista machine. (SyncToy has both a 32-bit version and 64-bit version. Be sure to download the correct one for your computer.)

The installation was straightforward. I loaded SyncToy by typing "sync" into the Start Search field of the Start Menu (to open the Start Menu, click the Microsoft logo in the lower left-hand corner, or hit the Microsoft flag key), then selecting "SyncToy 2.1" from the Programs list at the top of the menu. See Figure 1 for the first screen.

Figure 1. SyncToy Welcome screen.

SyncToy is intuitive in that all you need to do is browse to select the two folders you want to sync. Normally you will select the already existing folder on your computer (on the left) and create an identical folder on the sync device (on the right). However, if your computer will act as the sync backup, the process will be reversed (see Figure 2). Synchronization (as it is in SyncToy) is normally portrayed in software programs as being done from left to right; therefore, your original or primary source should be selected from the left-hand side of the screen—even if it is a remote computer or device.
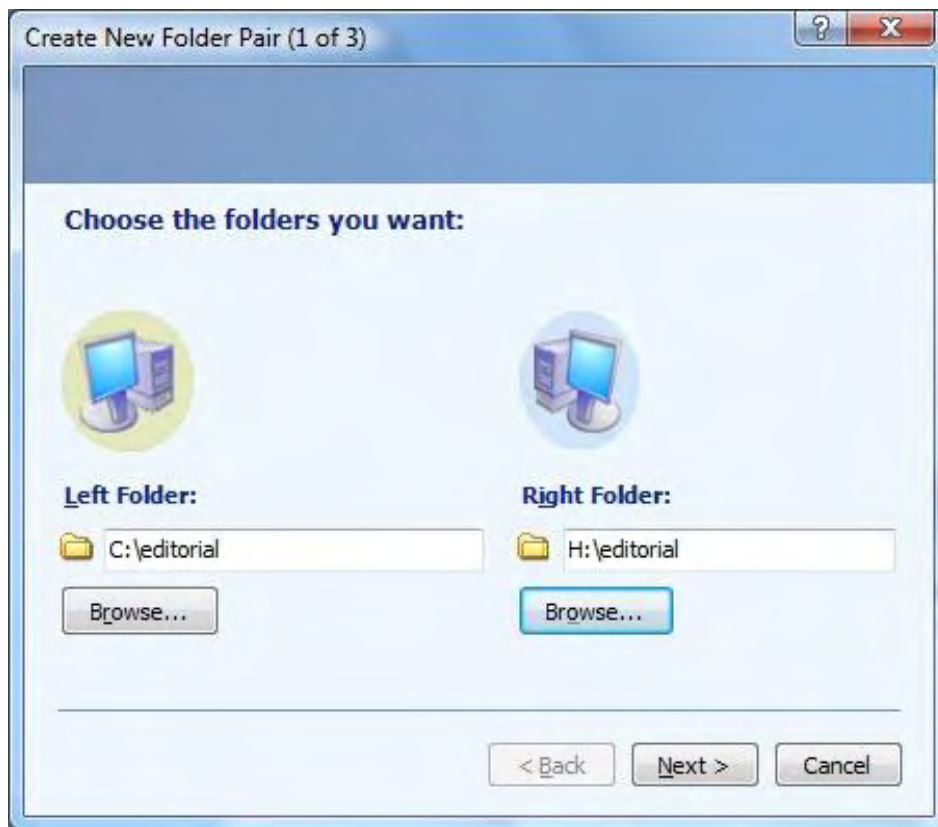
Figure 2. Create New Folder Pair (1 of 3).

The next step involves selecting the type of synchronization you want to do. In SyncToy there are three options: Synchronize, Echo, and Contribute (see Figure 3). You should pick the one that will optimize your purpose in synchronizing files, whether for sharing or backup.

Synchronize should be used when you want to keep an identical set of files on both systems or devices. This two-way process is ideal for photos, music, videos, or traveling working documents that you want up-to-date on both systems. When you add or delete on one device, each will be updated on the other.

Echo is a one-way process primarily used for backup or keeping an external device up-to-date with a primary catalog. All changes and deletions will appear on the backup on the right, but changes made to the backup will not sync to the original on the left.

Contribute is a one-way (left to right) system similar to Echo, except that no deletions are made on the backup. No old files or name changes will be lost.
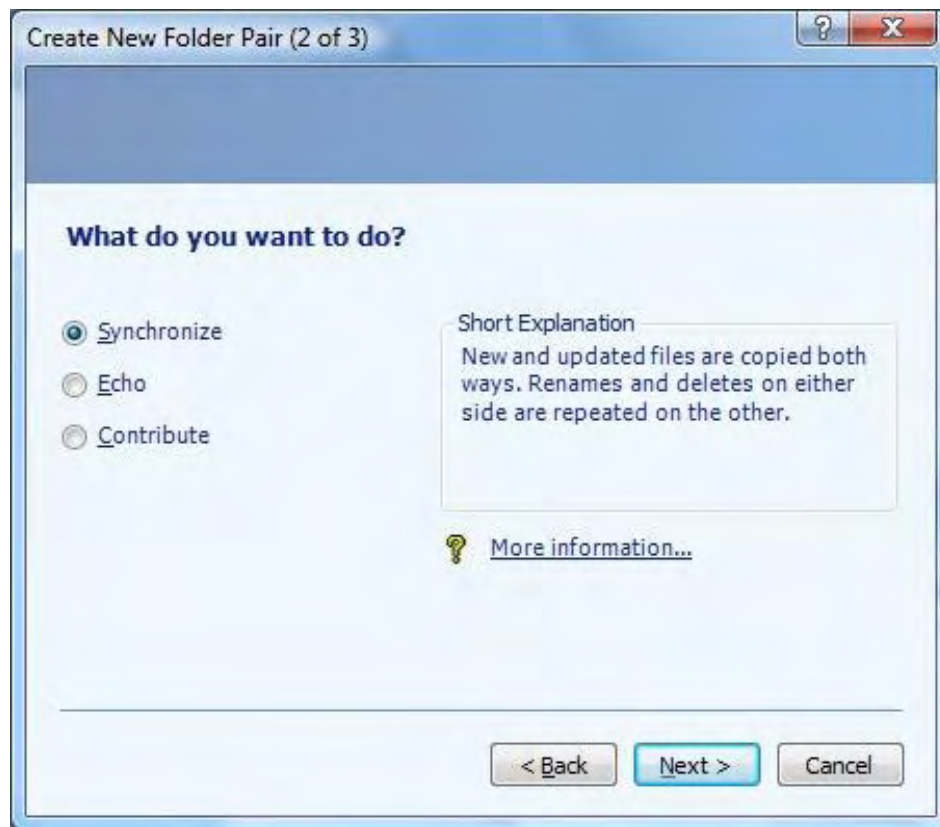
Figure 3. Create New Folder Pair (2 of 3).

"Create New Folder Pair (3 of 3)" allows you to name the folder pair. After the pair naming, the next screen is identical to the first-run screen above, only now all the options are available (see Figure 4). Of particular note is that you can run Preview to view what changes will be made before you decide to run the sync. It can be especially useful for determining whether to run the sync now or later. The first time that you run the SyncToy sync for a pair, the process may be quite time-consuming depending upon how many files are copied. The first run will copy every file and folder from left to right.

Figure 4. SyncToy main screen.

When the Run button is clicked, a Results screen will open, tracking all of the changes during the sync (see Figure 5). When completed the screen will show final results—plus any errors. One of the most common errors may be when a locked file cannot be copied. Another program may have that file in exclusive use—all other users are locked out. In that situation, close the program locking the file, then run the sync in SyncToy again.
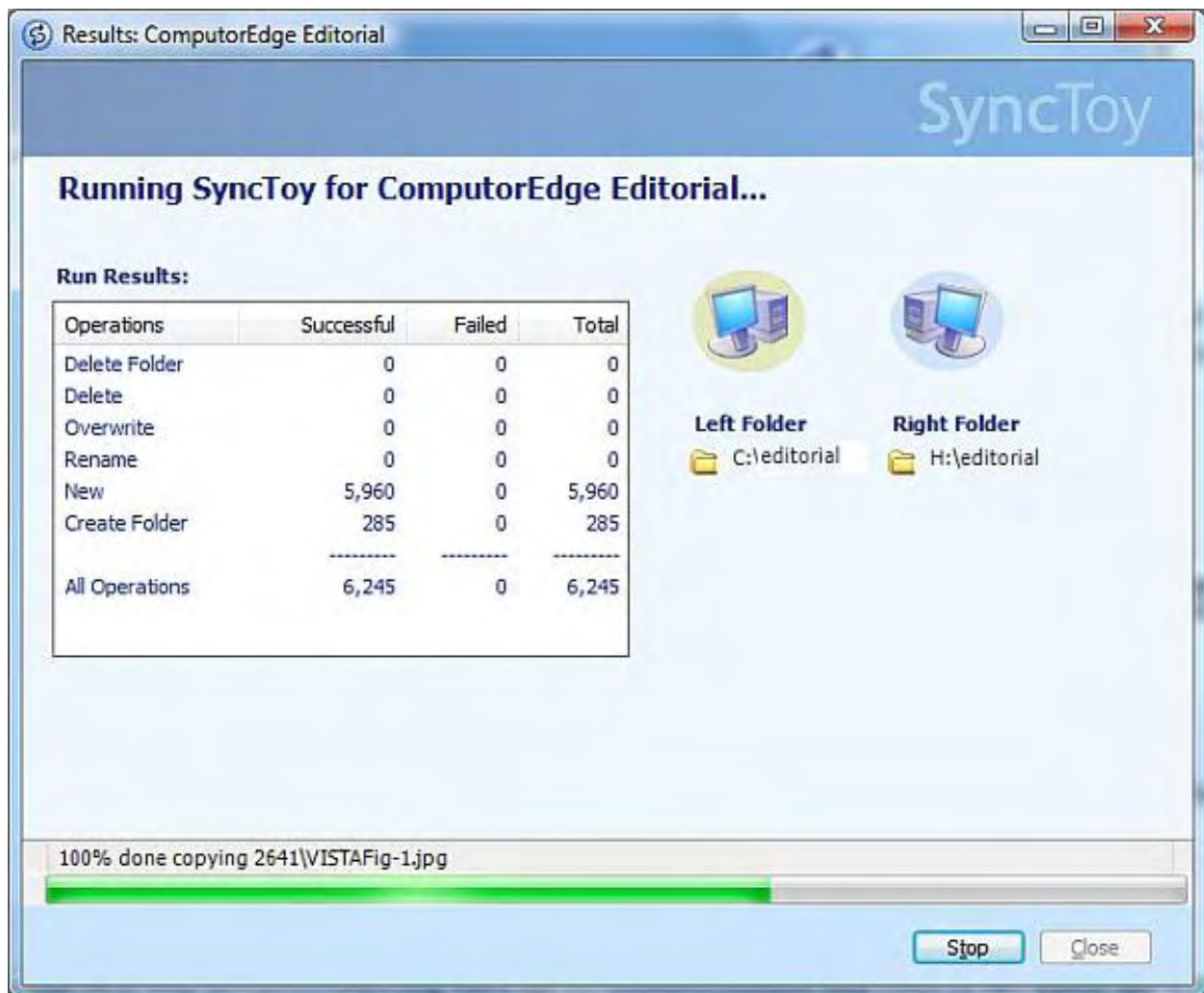
Figure 5. SyncToy run Results screen.

While SyncToy does not have an automatic scheduler built into it, Windows Task Scheduler can be used to run the syncs in the middle of the night when they won't interfere with other computer activity. Check the built-in SyncToy Help for the how-to topic "Schedule SyncToy" for details.

SyncToy is easy to install and use. If you have the Home version of Windows Vista or Windows 7, then SyncToy could be a useful solution for many of your sharing and backup problems.

Jack is the publisher of *ComputorEdge* Magazine. He's been with the magazine since first issue on May 16, 1983. Back then, it was called *The Byte Buyer*. His Web site is *www.computoredge.com*. He can be reached at *ceeditor@computoredge.com*

Wally Wang's Apple Farm: MP3 Files

"Save your audio files as MP3 files." by Wally Wang

If you want to save your audio files as MP3 files, here's a look at how you can change the default audio format used by iTunes. Also, a discussion of the dying media market—and how Apple's rumored Tablet fits in; a look at the free, open-source Play media player; a discussion of Apple's astonishing profits; and a tip on creating a ringtone from an iTunes purchase.

To play audio files on your Macintosh, you'll probably use iTunes. There are other media players you can use, but iTunes is popular, free, and more importantly, provides links to the iTunes Store where you can buy music for 99 cents or more. The real genius of iTunes isn't the program, but the online store that sells everything from singles and albums to TV shows and movies.

Of course, most people already have a collection of audio CDs, so why bother buying songs that you already have on disc? Just pop the CD into your computer and iTunes can import it as a digital file.

By default, iTunes will use something called the AAC (Advanced Audio Coding) format. While the AAC format may sound better and take up less space, it's also not as compatible with as many devices as the MP3 format. If you want to save your audio files as MP3 files, this is how you can change the default audio format used by iTunes.

Open iTunes, click the iTunes menu and choose Preferences. Click the General icon and you'll see the General dialog.

Figure 1. The General dialog displays the Import Settings button.

There's a pop-up menu called "When you insert a CD." The default setting is "Ask to Import CD," but you can change this to other settings, such as Import CD or Begin Playing. If you want to transfer all of your audio CDs into iTunes, you'll probably want to change this setting to Import CD and Eject since this will let you keep shoving CDs into your Macintosh, importing the songs, and ejecting the disc without much effort on your part.

Next, click the Import Settings button. Click the Import Using pop-up menu and choose MP3 Encoder. You may also want to click in the Settings pop-up menu and choose Good Quality (128Kbps), High Quality (160Kbps), or Higher Quality (192Kbps). The higher the quality, the better the sound—but the larger the file size.

Figure 2. Changing the Import Settings.

In case you want to edit your MP3 files, grab a copy of the free program Audacity (*audacity.sourceforge.net*). With Audacity, you can adjust the volume of an MP3 file or make the beginning or ending fade in or out.

Figure 3. Audacity lets you edit an MP3 file.

As new and used music stores disappear from the retail market, you might want to convert your audio CD collection into digital files so you'll always have them forever, or at least until you forget to back up your hard drive.

The Dying Media Market

The music stores became the first casualty of digital content when Napster allowed people to share music files. That marked the end of CD sales, and music stores shut down soon afterward.

With high-speed Internet connections, video stores are the next to get hurt. Blockbuster's fate is all but sealed as their retail stores are too expensive and limited to compete against Netflix and streaming digital content. If you want to watch free TV shows, visit Hulu (*www.hulu.com*), and if you want to watch free movies, check out YouTube Movies (*www.youtube.com/*

movies).

Both sites offer a limited selection, but it's growing and will eventually overwhelm the equally limited selection at your local Blockbuster store. Watching video content on a computer or cell phone is the inevitable trend, making places like video rental stores as obsolete as music stores.

Following in the demise of music stores and video stores are the bookstores. Used bookstores are shutting down, independent bookstores simply can't offer the selection or the discounts of Amazon.com, and even the big-name franchises like Borders are struggling.
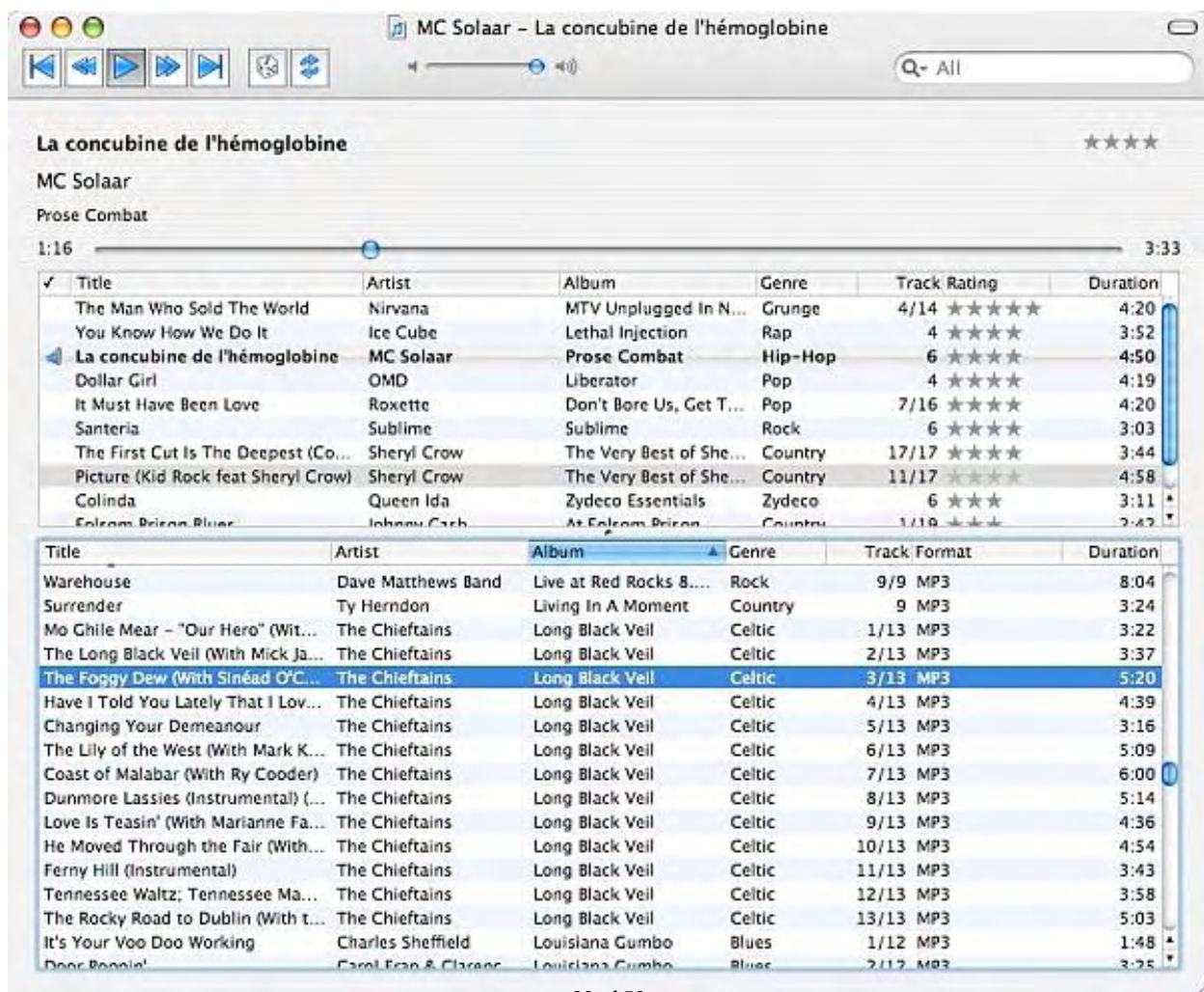
With newspapers fading and bookstores slowly dying, it's only inevitable that books will become the next major digital content available on computers. That's why Amazon.com offered its Kindle e-book reader and Barnes & Noble offered its Nook rival.

The problem is that a standard for e-book distribution and an e-book format hasn't been defined yet, but that hasn't stopped everyone from jumping into the market because they can already see the trend toward digital. Nobody wants to be caught flat-footed like Polaroid in missing the digital revolution, so that's why everyone is eagerly anticipating Apple's rumored tablet computer, which will supposedly specialize in offering e-book content.

Whatever Apple provides next year with its tablet computer, it will define the market in one way or another. Other companies such as Microsoft (*gizmodo.com/5365299/courier-first-details-of-microsofts-secret-tablet*) are waiting to see what Apple releases first before committing to their own e-book reader/tablet device. In any event, next year should be the year of the tablet computer.

Play: An Open-Source Media Player

Most people will probably just use iTunes because it's there. However, if you need to play oddball audio formats such as FLAC or Ogg Vorbis, you might want to grab a copy of the free, open-source Play (*sbooth.org/Play*) program.

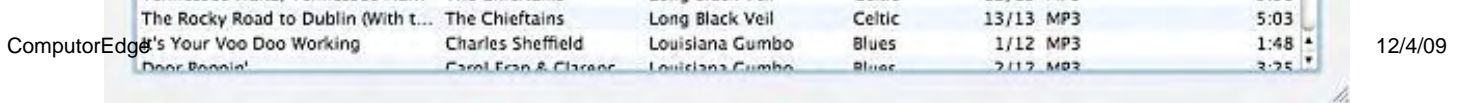|						
The Rocky Road to Dublin (With t...	The Chieftains	Long Black Veil	Celtic	13/13 MP3	5:03
's Your Voo Doo Working	Charles Sheffield	Louisiana Gumbo	Blues	1/12 MP3	1:48
Door Poppin'	Carol Fran & Clarenc	Louisiana Gumbo	Blues	2/12 MP3	3:25

Figure 4. The free Play program lets you play a variety of audio formats.

One nice feature of Play is its ability to play every song at a consistent volume. Normally audio files ripped from a CD may play at different volumes, so listening to songs from different CDs can result in one song being too loud and a second song being too soft. With Play, every song plays at the same volume so you don't go mad constantly adjusting the volume every time another song plays.

Like iTunes, the Play program also includes a metadata editor so you can edit each audio file's information, such as the song title, artist name, or genre. However, you may not want to replace iTunes with Play, especially since Play is still developing as a 0.3 program version.

If you're a programmer, you can even download the source code to Play. Now you can modify the program and add the features you want and possibly make Play even better than iTunes.

Apple Grabs 48 Percent of Computer Revenue

Here's an odd story (*www.betanews.com/joewilcox/article/Nearly-half-the-money-spent-at-US-retail-on-desktop-PCs-goes-to-Apple/1259171586*). According to this article, Apple had less than 10 percent market share, but earned over 47 percent of the revenue. For one company to earn almost half of all the revenue while selling so few computers is astonishing.

The real question is why is Apple making so much money with a smaller market share during a recession when other companies, such as Dell, recently reported a 54 percent drop in profit (*www.nytimes.com/2009/11/20/technology/companies/20dell.html*)?

After all, if Apple and Dell computers are basically identical, then nobody in their right mind would pay more just for an Apple logo. During a recession when people have less money to spend, why wouldn't they choose a less expensive Dell PC rather than a Macintosh?

Is everybody who buys a Macintosh just foolishly throwing their money away? Most likely, the reason Apple sells so many computers is because people find that they get value for their money. Whether you spend $1,000 or $500 for a computer, the price is irrelevant if you don't feel you're getting your money's worth.

I paid around $800 for my Mac mini with 4GB of RAM, and I feel like I got my money's worth. I wouldn't pay more than $1,000 for a Mac mini, but I might consider paying more than $1,000 for the latest iMac with its built-in monitor and included keyboard and mouse.

In comparison, I paid $249 for my Windows 7 Acer laptop, and I still felt like I got my money's worth. Until I saw this $249 laptop, I was willing to spend up to $500 for a Windows 7 computer. Anything beyond $500 for a Windows 7 PC was too high of a price for me because then I wouldn't feel I got my money's worth. A $1,000 PC might have given me a blazingly fast processor, up to 6GB of RAM, and a massive hard disk, but all of these hardware specifications are irrelevant if I didn't like using it.

When Windows enthusiasts argue that the Macintosh is overpriced, they're ignoring the fact that the Macintosh has the highest customer satisfaction of any computer (*news.cnet.com/8301-13579_3-10222213-37.html*). Basically, you get what you pay for.

If you're environmentally conscious, you might want a computer that uses the least amount of electricity as measured by sust-it.net (*www.sust-it.net/energy_saving.php?id=20&start=0&sd=1&tariff=38*). Based on this report, the Mac mini is the most energy-efficient computer on the market, which is one more reason to get the Mac mini over any other Macintosh model.

Buying a computer is never about getting the most hardware for the least amount of cash. Buying a computer is always about finding the one that you enjoy using that can get the job done while making your life easier. For many people, that computer is a Macintosh, even at twice the price of a bargain PC.

*   *   *

If you bought a song from the iTunes Store, you can turn that song into a ringtone. Just right-click on that song and choose

Create Ringtone from the pop-up menu.

Figure 5. iTunes lets you create a ringtone from any song you bought from the iTunes Store.

Unfortunately, iTunes won't let you create a ringtone from any song that you've downloaded from a file-sharing network or that you imported from an audio CD. This is just Apple's way of forcing you to buy songs from the iTunes store.

In the early days, before Wally became an Internationally renowned comedian, computer book writer, and generally cool guy, Wally Wang used to hang around The Byte Buyer dangling participles with Jack Dunning and go to the gym to pump iron with Dan Gookin.

Wally is responsible for the following books:

 • Microsoft Office 2007 for Dummies (*www.amazon.com/gp/product/0470009233?ie=UTF8&tag=the15minmovme-20&linkCode=as2&camp=1789&creative=9325&creativeASIN=0470009233*)
 • Beginning Programming for Dummies (*www.amazon.com/gp/product/0470088702?ie=UTF8&tag=the15minmovme-20&linkCode=as2&camp=1789&creative=9325&creativeASIN=0470088702*)
 • Breaking Into Acting for Dummies with Larry Garrison (*www.amazon.com/gp/product/0764554468?ie=UTF8&tag=the15minmovme-20&linkCode=as2&camp=1789&creative=9325&creativeASIN=0764554468*)
 • Beginning Programming All-in-One Reference for Dummies (*www.amazon.com/gp/product/0470108541?ie=UTF8&tag=the15minmovme-20&linkCode=as2&camp=1789&creative=9325&creativeASIN=0470108541*)
 • Steal This Computer Book 4.0 (*www.amazon.com/gp/product/1593271050?ie=UTF8&tag=the15minmovme-20&linkCode=as2&camp=1789&creative=9325&creativeASIN=1593271050*)
 • Visual Basic Express 2005: Now Playing (*www.amazon.com/gp/product/1593270593?ie=UTF8&tag=the15minmovme-20&linkCode=as2&camp=1789&creative=9325&creativeASIN=1593270593*)
 • My New Mac (*www.amazon.com/gp/product/1593271646?ie=UTF8&tag=the15minmovme-20&linkCode=as2&camp=1789&creative=9325&creativeASIN=1593271646*)
 • My New iPhone (*www.amazon.com/gp/product/1593271956?ie=UTF8&tag=the15minmovme-20&linkCode=as2&camp=1789&creative=9325&creativeASIN=1593271956*)
 • Strategic Entrepreneurism with Jon Fisher and Gerald Fisher (*www.amazon.com/gp/product/1590791894?ie=UTF8&tag=the15minmovme-20&linkCode=as2&camp=1789&creative=9325&creativeASIN=1590791894*)

Every Saturday morning from 9:00 am - 10:00 am in San Diego, you can hear Wally with fellow co-hosts Dane Henderson and Candace Lee, on the radio show CyberSports Today (*cybersportstoday.com/*), which covers the video gaming industry on ESPN Radio 800 AM. Wally covers the military history side of the video game industry.

When not performing stand-up comedy or writing computer books, he likes to paper trade stocks with the video game Stock Reflex (*www.plimus.com/jsp/download_trial.jsp?contractId=1722712&referrer=wwang*), using the techniques he learned from a professional Wall Street day trader.

Wally can be reached at *wally@computoredge.com* and at his personal web site (*www.wallacewang.com/*).
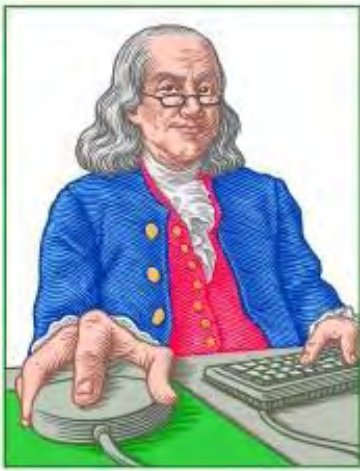
Linux Lessons: Tips and Tricks--Using Ubuntu

"Getting to Know Ubuntu, Part 4: The Graphical User Desktop" by Pete Choppin

Last week we finalized the installation of Ubuntu and briefly introduced the Gnome Desktop. Now we are going to take a look at how to customize the desktop to your preference. Also, Pete answers a question from a reader who wants Linux software to play DVDs on his laptop.

A Question of Playing DVDs in Ubuntu

Pete,

In one of your next Linux Lessons, would you talk about Linux software to run my DVD player on my Toshiba laptop? I've been using Ubuntu for the past month or so, and I still have not been able to find software that will allow me to play my Netflix movie DVDs.

Jim

Hi Jim,

You have brought up the perfect situation where sometimes Linux is not altogether ready right from the install, and where a little Internet searching and some command-line slight-of-hand knowledge can come in very handy.

I, too, tried to insert a DVD movie on my newly installed Ubuntu, and what was launched by default was the Movie Player application. Like you, I was promptly greeted with a fairly nondescript error complaining that I was missing something in my software to be able to play the DVD. What is missing are the proper codex, and I found with just a little bit of reading on this that actually getting the Movie Player ready to be able to actually play a DVD is a difficult process that requires many steps.

Well, after having tried installing a few other video apps I found from the Ubuntu Software Center to no avail, I remembered a similar issue that I have had with Fedora, another Linux distribution. The way I solved this on Fedora was to install another application called Xine. Xine is an older video and DVD player application. I thought I'd give this a try on Ubuntu.

Unfortunately, the Ubuntu Software Center does not have Xine listed as one of the available apps. The next best thing in this case is to go to the Internet and search for Xine for Ubuntu. This resulted in finding this site (*www.ubuntugeek.com/install-xine-multimedia-player-in-ubuntu.html*). When I followed the instructions, it installed Xine and I was able to play my DVD.

So thank you for bringing this up. This is exactly the type of issue users new to Linux often face.

I hope this helps.

Pete

<div align="center">*   *   *</div>

Last week we finalized the first three parts covering installation of Ubuntu:

- *"Step One: Getting Ready for Ubuntu"*
- *"Step Two: Partitioning."*
- *"Step Three: Finishing the Installation."*

Plus, we briefly introduced the Gnome Desktop. Now we are going to take a look at how to customize the desktop to your preference.

Ubuntu—Here We Are. Where Do We Go?

Like many Linux distributions, Ubuntu has two main interfaces that you can use to access the programs and utilities available on the operating system. These are the graphic user interface (GUI) and the command line. As mentioned last week, the graphic interface is the desktop environment. This is what you are presented with when Ubuntu boots up. Programs and applications are accessed, or launched, via menus and shortcuts, which we call links in Linux. Right from the installation, you will notice that the desktop is pretty much empty, with the exception of the menu bars on the top and bottom of the screen. Other than that, all you have is the background. Links may be added to the desktop if you wish. It is a simple matter of dragging an item in the menu out to the desktop. When you drag an icon out to the desktop, the cursor and the image will indicate that you will be adding a link to the desktop:

A desktop link.

Desktop Appearance

One of the nicest features of most Linux distributions is the ability to customize the appearance of the desktop, and Ubuntu is no exception. The appearance preferences are located by going to the System, Preferences menu, and then clicking on Appearance.

System, Preferences menu.

The Appearance Preferences menu will then be displayed.

Appearance Preferences menu.

>From this menu you can modify everything about the appearance of the desktop. The two tabs I find the most useful are Theme and Background. These two areas allow me to modify about anything I need. There are even links to more themes (*art. gnome.org/themes/*) and backgrounds (*art.gnome.org/backgrounds/*) online where you can browse through hundreds of themes and backgrounds. You can literally set up your desktop to appear exactly how you like.

Screensaver and Power Management

If you click on the System, Preferences menu and then select Screensaver, the Screensaver Preferences menu will appear. There are a few things we should point out here.

Screensaver Preferences menu.

First are the many screensavers available. Of course, more can be downloaded from the Internet if you are really into these. Notice that a few of the screensavers on the list begin with the letters GL. This refers to the OpenGL standard used for 2D and 3D graphics and applications. Screensavers written in the OpenGL standard tend to be rather graphic-intensive, so unless you have a fairly robust graphics card in your computer, you may want to avoid these screensavers. They are cool, though, if your graphics card can handle them.

The other area is the Power Management button at the bottom of the Screensavers Preferences screen. When you click this button, the Power Management Preferences menu appears:
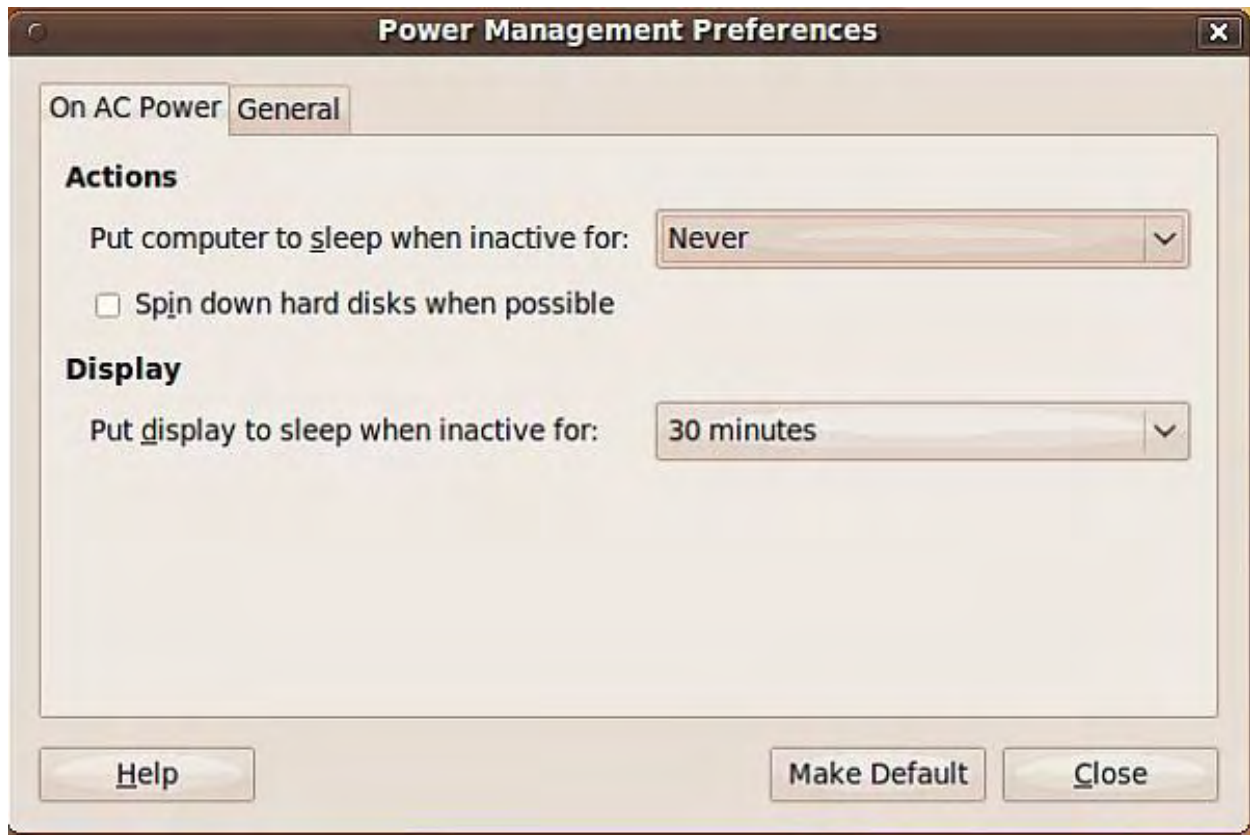
Power Management Preferences menu.

The default setting for Power Management is to put the display to "sleep" after 30 minutes of inactivity. While this is great for saving battery power on a laptop, I find it annoying to have my display turn off after 30 minutes on my desktop, so I usually will change this from "30 minutes" to "Never." If I want my screen to be turned off or changed, I will let the screensaver do this instead of the power manager.

Here is a screenshot of my desktop after I have made some modifications:
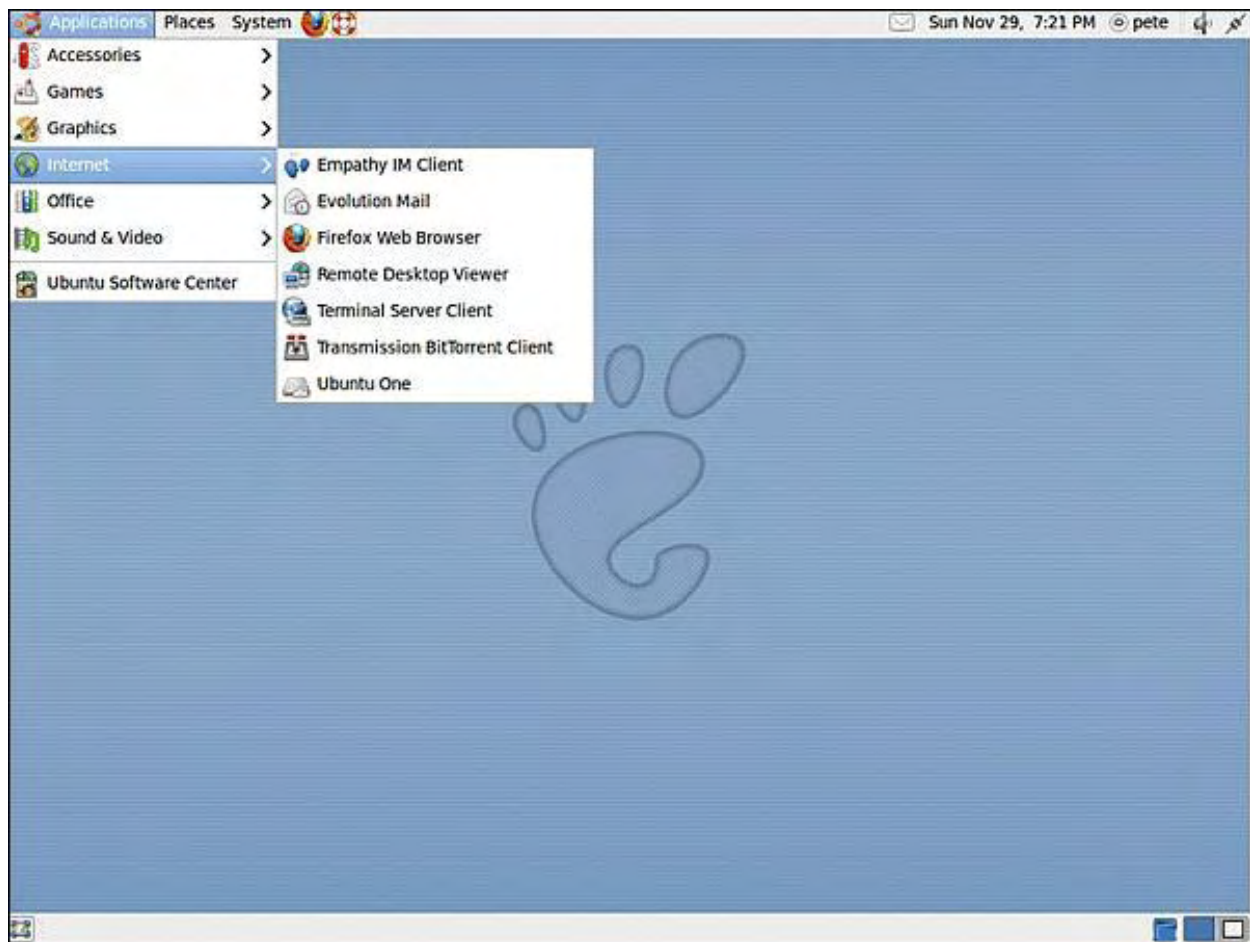
Desktop in Ubuntu.

As you can see, I am able to create an entirely different look just by modifying the appearance of the desktop.

Next week we will discuss more about the command line and the Linux file system. Stay tuned.

Pete Choppin has worked in the computer and IT industry for 13 years. He currently works as a network and systems administrator for a company called Albion based in Clearfield, Utah. His interests include cooking, sci-fi, computers and technology, and web design—a semi-professional endeavor, having designed Web sites in the dental field, e-commerce businesses, and for the Boy Scouts of America.Pete also contributes regularly to Ptolemy's Tribute (*ptolemystribute.blogspot. com*)—a blog which covers political and technical topics and issues. Pete has been a devout reader of *ComputorEdge* since 1990. He has contributed to articles and responded to topics on *ComputorEdge*. He can be contacted at *pchoppin@comcast.net*

Worldwide News & Product Reviews

"The latest in tech news and hot product reviews." by Charles Carr

Prevent the Most Commonly Committed Crime—A dozen security tips for shopping online safely; Microsoft's Lucky 7—Here's the take of one San Diego-area teen who most definitely would tell you, "I'm a PC."

Prevent the Most Commonly Committed Crime

According to Identity Finder (*www.identityfinder.com*):

Approximately 10 million Americans have their identity stolen each year according to the Federal Trade Commission (FTC). As more business is conducted online and sensitive data is stored on personal computers, the risk of fraud increases exponentially. The holiday shopping season further increases this risk as online retailers provide heavy discounts to attract consumers searching for the best deals.

Theft-prevention expert and Identity Finder CEO Todd Feinman explains, "It's shocking how easy it is for identity thieves to steal massive amounts of credit card numbers, Social Security numbers, and online passwords—but it is happening every day. Thieves sell this information or use it themselves to withdraw money from your bank account, make fraudulent purchases, or ruin people's credit. And it is becoming easier and more common for them to steal this information from computers."

Most of the time people don't realize their passwords or credit card numbers have been stolen until it is too late. The information is harvested by spyware, viruses, phishing attacks, and other malicious programs and then shared with other hackers or sold online through underground websites.

Identity Finder provides a dozen security tips for shopping online safely and protecting your computer.

1. Avoid Phishing Attacks: Before typing your username and password to enter a site, make sure the Web site address is correct. Do not click on links from e-mails you receive. Microsoft acknowledged in October that over 10,000 Live Hotmail accounts were compromised by a phishing scam.

2. Don't trust "scareware": Do not click on advertisements claiming you might be infected with a virus. Rogue ads recently started popping up on sites like The New York Times that purport you have a virus, only to trick you into downloading malware. Rely on your system antivirus for this — free from Apple or Microsoft or available from other vendors.

3. Beware Who You Friend: Fake profiles have become very popular on social networking sites like Facebook. Holiday time is an excuse for people to purport that they want to get back in touch. Protect the privacy of your profile by rejecting anyone you do not know. Do not post your full birth date, including the year.

4. Don't Shop in Public (online!): If buying something online, use your own computer. Don't use public computers while on vacation at hotels or airports. Public computers can have keyloggers that record your information as you type it.

5. Create Complex Passwords: When creating passwords at stores, use upper and lower case with numbers. Use at least seven characters and don't choose a word from a dictionary. Passwords can be guessed very quickly by hacker programs. If you need help remembering all your different passwords, use a Password Vault or Manager to secure them all.

6. Always Update Definitions: Anti-malware programs such as antivirus or anti-spyware software can only detect malware for which they have definitions. Download the latest definitions whenever they are available to prevent brand-new attacks.

7. Use SSL (aka the padlock!): A term you might not have heard of, but you probably have seen that little padlock in your Web browser near the address bar or in the bottom-right corner. Make sure it's there when entering personal information, as it indicates that your information is protected. Do not press Submit if there is no padlock at a store.

8. Install Latest Software Upgrades: Upgrade your operating system, Web browsers, and media applications with the latest versions. Hackers are always looking for ways to create new holes in existing software so they can steal your data. Software vendors patch these holes with upgrades. A recent banking Trojan stole money after infecting Web browsers.

9. Don't Give Personal Information Over Live Chat: When shopping online you might see a Live Chat window appear, letting you ask questions of a customer-service representative. Never give them your credit card number or other personal details.

10. Check Your Credit: Visit annualcreditreport.com (and not other knock-off Web sites with similar names) before and after the holidays so you can verify that no unauthorized credit cards are opened under your name and no large purchases were made without you knowing. Your credit report shows all your accounts and overdue balances.

11. Use One-Time Credit Cards: If you aren't familiar with a store, use a virtual credit card that expires after one use. Some Web sites masquerade as shops, but really just steal your credit card numbers.

12. Protect Your Identity: Do not keep unprotected copies of your identity on your computer. Most people have typed their Social Security number into an application or credit card number into an e-mail, but forgot it was saved in their computer. Manually search your computer—or check out the company's Identity Finder free—to find and protect anything that could be used to commit identity fraud if seen by a hacker.

Microsoft's Lucky 7

We've covered Windows 7 quite a bit in *ComputorEdge*, and rightly so. It's a big, fat, huge, kick-butt, game-changer of an operating system for Microsoft. Here's the take of one San Diego-area teen who most definitely would tell you, "I'm a PC."

The big question for Windows users has always been, "Is now the right time to upgrade?" With the recent release of Windows 7, all PC users have had this question running through their heads. For this reviewer, the benefits have been well worth the effort and expense.

Installing Windows 7 can be a breeze or completely grind your day to a halt. For most, running a fresh install will cause very few problems. If you are an owner of a computer from the XP days, make sure your hardware is still supported. Vista users will be pretty much safe, though you should check to be sure that your hardware vendors have updated their drivers to work with 7.

The real "fun" of installation starts with upgrading from a previous version of Windows. After popping the disc in, you will be greeted with a few screens of technical information and, if you're lucky, it will start to install.

Nearly every user that upgrades will find at least one program or another issue during "Compatibility Check," where Windows checks to see that all programs that are installed can be safely transferred to your new OS. Ever had one of those pesky programs that you just couldn't get to uninstall, or wouldn't completely go away? Well, Windows 7 shows no mercy, and it is your job to get it removed before continuing on the upgrade path. Before installation continues, all programs that Windows marks as "unstable" must be uninstalled, then reinstalled after 7 has been installed.

Any of you RC (Release Candidate) users out there are also in for a treat. Windows 7 RC cannot be directly upgraded; it must be reinstalled completely. Unfortunately, there is no way to simply change your key or upgrade without a complete fresh install. (That's the main reason I'm taking off half a globe in my rating.)

A very unique and useful feature Windows 7 brings to the table is the Snap feature. Taking any open window and dragging it to one side of the screen will automatically resize that window to fill that half of the screen. Dragging it to the top makes the window fill the screen. When you're done, you simply drag the window away from the side and it will return it to its previous size.
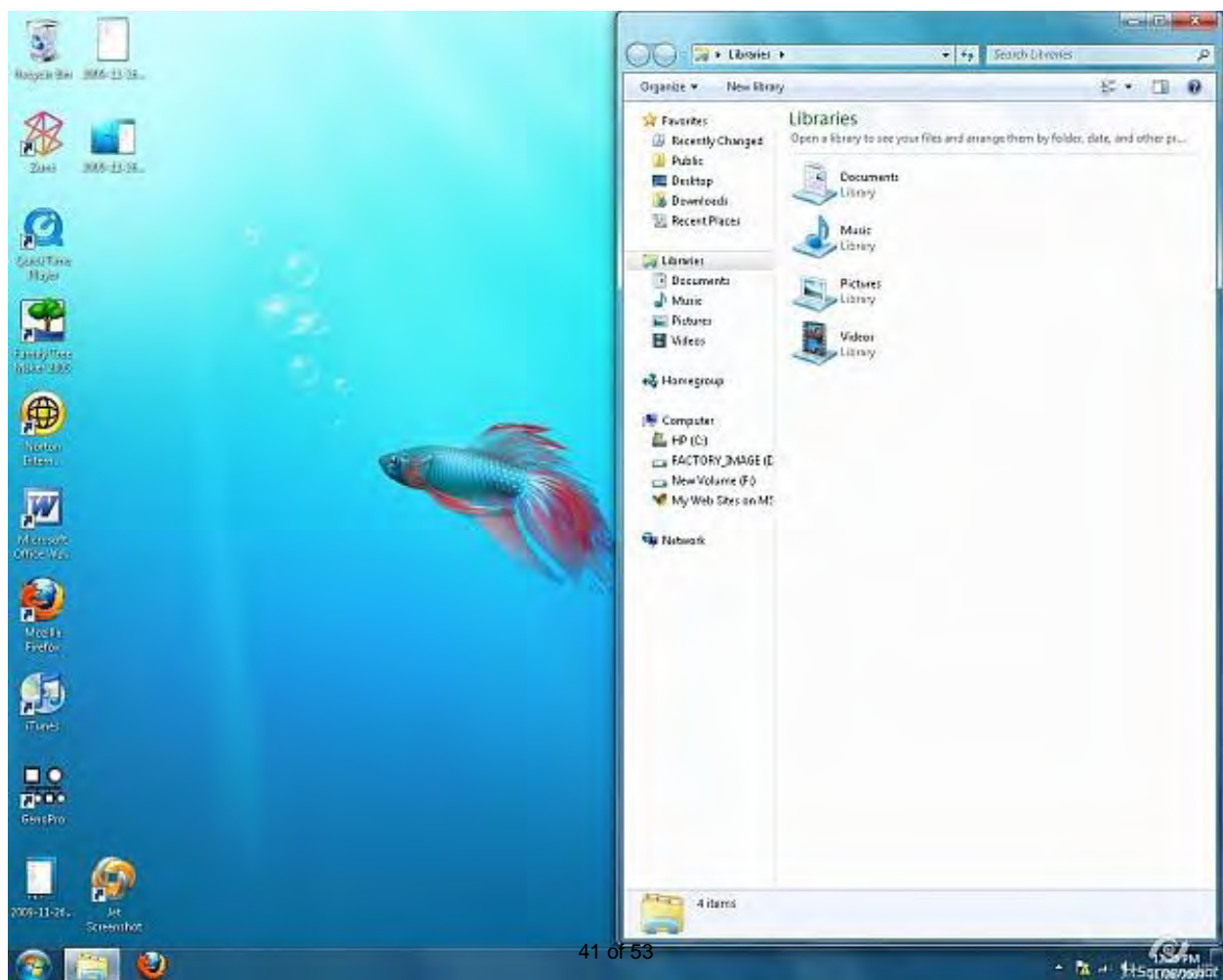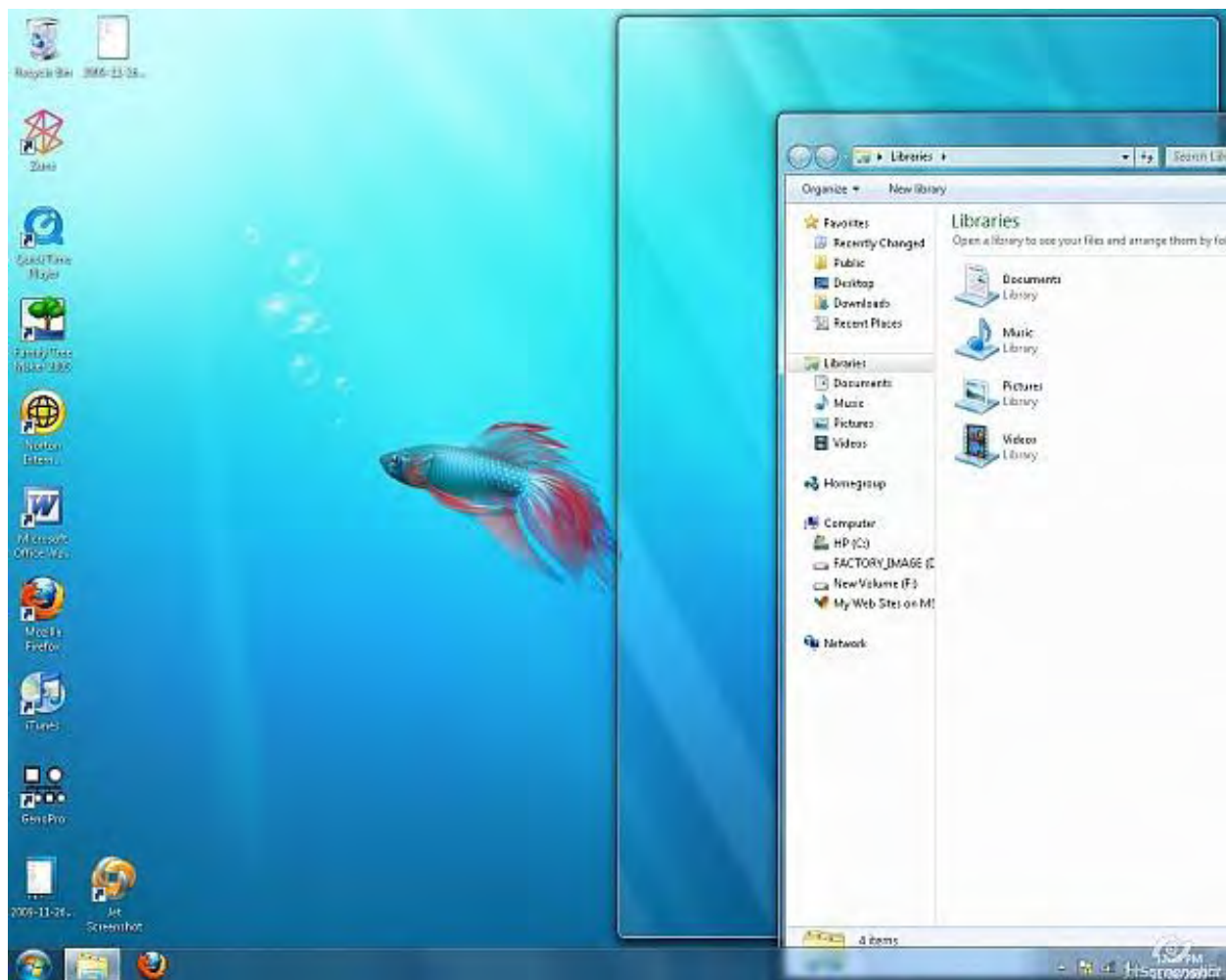
Figure 1. The Snap feature. Drag to the right (top) and resize to half the screen (bottom).

Another new feature that revolutionizes 7 is the addition of Libraries, basically a place for you to put all your documents, music, pictures, videos, and other files so you can get at and manipulate them easily. The part that makes it useful is the fact that you can add folder locations to the Libraries. That enables you to view all of that folder's subfolders right in the Library along with everything else you have added. The cool thing is that your files stay in their original directories; putting them in the Libraries just gives you an easier means of accessing them.

Figure 2. Libraries.

One of the main updates you will notice is the new Taskbar. The Taskbar still has most of the same features from previous versions, but with added functionality. In pretty much all previous versions of Windows, if two instances of a program were open, there would be two Taskbar icons. With 7, it stacks all similar program instances so that, if you place your mouse over the icon, you will be able to view thumbnails of what is going on instantly. Another nifty feature is the ability to pin "tasks" to the Taskbar. Dragging any program to the Taskbar and dropping it will create a shortcut on the Taskbar. Another nice Taskbar addition are the new "Jump Lists," where right-clicking provides a list of frequently used files.
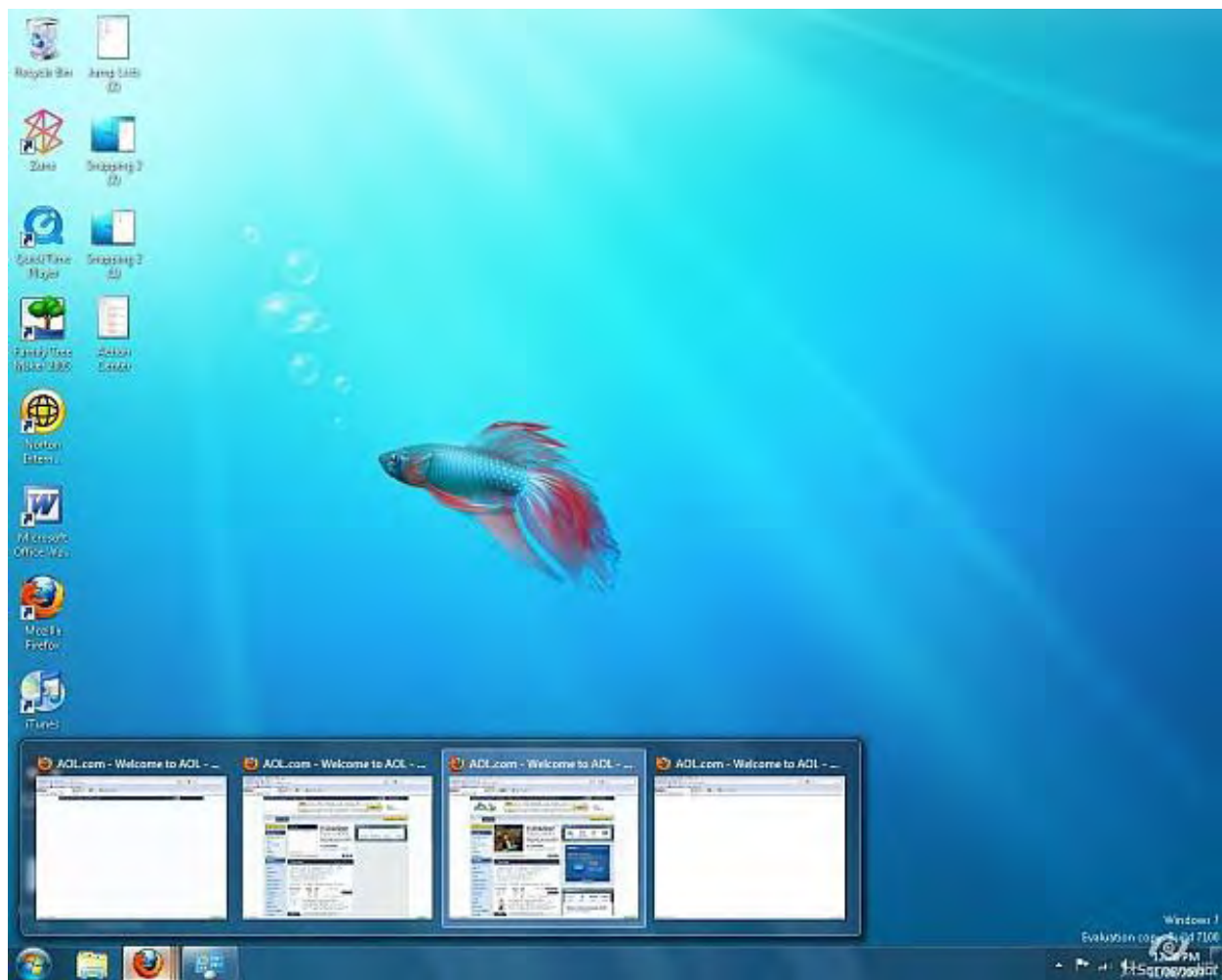
Figure 3. Thumbnails (top) and Jump Lists (bottom).

Windows 7's CPU usage has been decreased significantly from Vista. Most users—especially Vista users—will experience a general increase in responsiveness and speed in your programs (XP users generally feel like Win 7 feels about the same).

With the updated Device Manager, connecting new hardware is easier than ever. Windows 7 automatically searches your computer and the Internet to find the right driver. The new Action Center keeps all your messages about updates and any problems in one easy-to-get-at place. Undoubtedly in the past you have had to force a program to shut down, only to find it still continued to cause problems. With the Action Center, any programs that experienced an unexpected shutdown can be diagnosed and Windows will search the Net to see if there are any solutions to your problem.
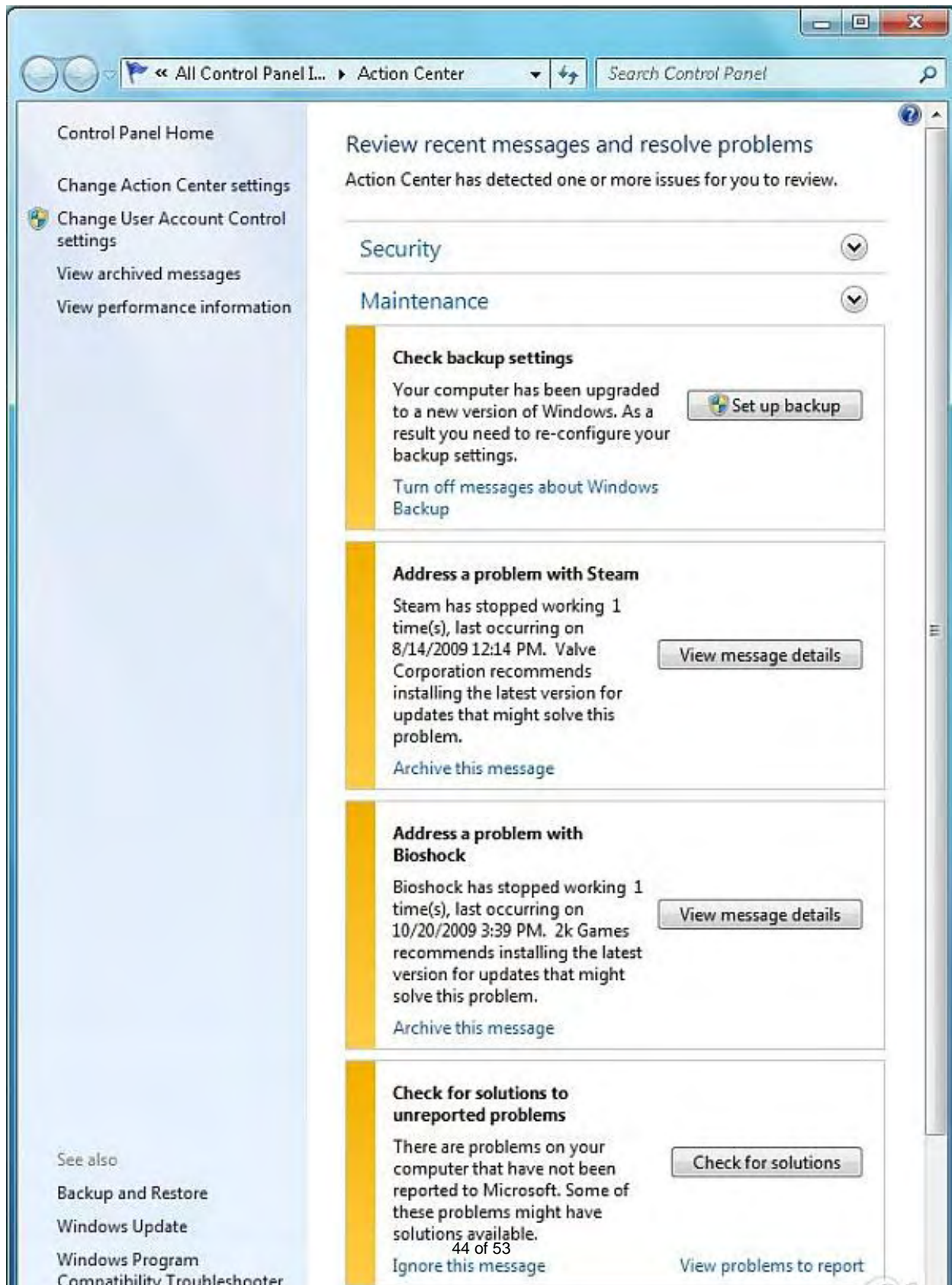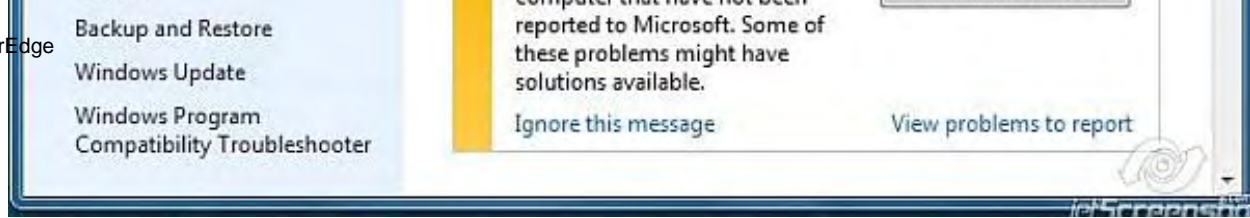
Figure 4. The Action Center.

There's lots more to Windows 7 than I've been able to outline here. I'm finding new things every day that surprise me—in the right way. In this reviewer's opinion, Windows 7 is a fantastic OS.

⊕⊕⊕⊕ ⬱

Review contributed by Jeremy Halligan

In addition to being an editor and columnist for *ComputorEdge* and *ComputerScene* Magazines, where he has written hundreds of feature articles and cover stories over the past decade, Charles Carr has also penned well over 1,000 non-tech newspaper and magazine articles and columns for various publications, including two widely-read columns each week for San Diego's *North County Times* newspaper.

Carr has covered such diverse topics as pesticide use in area schools, invasive background checks for county volunteers, asthma awareness, the debate over standards-based grading, potential vulnerabilities in electronic voting machines, and Southern California's devastating 2003 and 2007 wildfires. He has also written many humorous pieces.

Carr has also edited dozens of stories and articles written by others which have appeared in major publications and web sites across the country.

He has been a contributor and technical advisor to *L.A. and San Diego Parent* magazines and receives dozens of requests a year to appear on Southern California television and radio stations to talk about important events in the tech world.

Carr has judged many writing competitions including San Diego Press Club and Time-Warner Communications contests and was sole judge for the national NAPPA Tech Toys awards for five years (which his kids really appreciated). He was recently a judge for the national "Poetry Out Loud" competition.

He has won many writing accolades, including Press Club awards for Best Column Writing, Consumer Writing and Best Arts and Entertainment, and has repeatedly taken top honors in San Diego Songwriter's Guild competitions for his original musical compositions.

Carr will soon publish his first book, *What a World*, a collection of his best writings.

Learn more at *www.charlescarr.com*.

Spam of the Week: Swine Flu Vaccination Program

"The latest in annoying and dangerous e-mail currently making the rounds." by ComputorEdge Staff

Malware e-mails are now using the H1N1 flu as a hook—what took them so long?

We're surprised that it took malware spammers so long to use the H1N1 flu as a hook to place a Trojan horse on people's computers. Disguised as an e-mail from the Centers for Disease Control and Prevention, the subject line in the spam tries various headlines, as seen in Figure 1.

From	To	Subject
Centers for Disease Control and Prevention	suggestio...	State Vaccination Program
Centers for Disease Control and Prevention	onlinesub...	State Vaccination H1N1 Program
Centers for Disease Control and Prevention	ceeditor...	Your personal Vaccination Profile
Centers for Disease Control and Prevention (CDC)	prod@co...	Creation of personal Vaccination Profile
Centers for Disease Control and Prevention	postmast...	Creation of your personal Vaccination Profile
CDC	daemon@...	Governmental registration program on the ..
Centers for Disease Control and Prevention	postmast...	Your personal Vaccination Profile
Centers for Disease Control and Prevention (CDC)	man@co...	State Vaccination Program
Centers for Disease Control and Prevention	mailer-da...	Creation of personal Vaccination Profile

Figure 1. A few of the malware e-mails using H1N1 flu as a hook.

The e-mail claims that you need to create a profile with the Centers for Disease Control. You don't, and the CDC keeps no such database. Each of the fraudulent e-mails is identical in the text (for now), although the site referenced in the link may vary slightly (see Figure 2). If you click the link, it will take you to a very official-looking Web site. Don't bother to click the link.
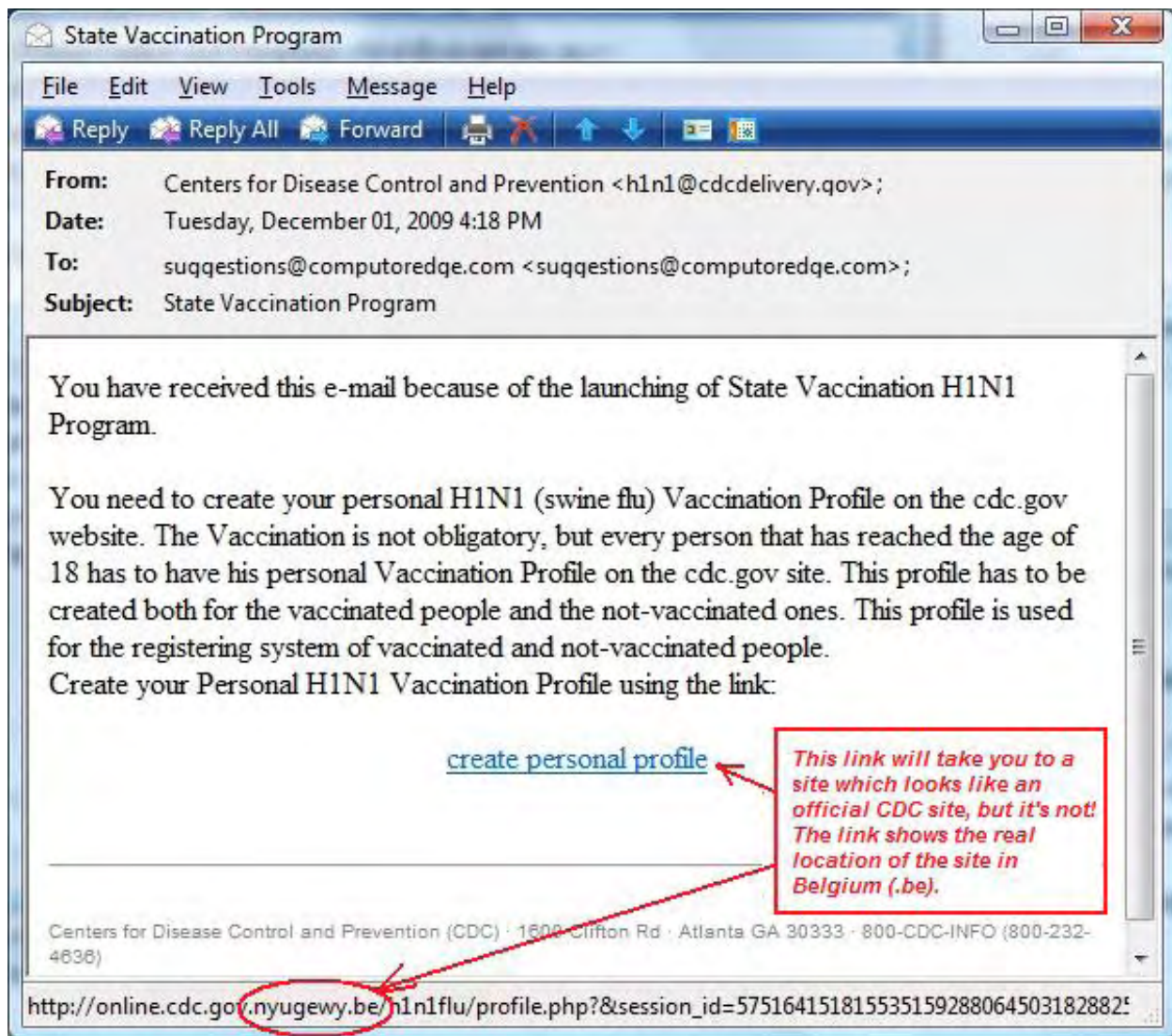
Figure 2. The spam e-mails all have identical language, and the link will take you to a Web site that looks like an official CDC site. It's not!

The fake site is designed to entice you to download a file "vacc_profile.exe"—a Trojan horse that steals passwords. When run, it is said to put a copy of itself in the Windows System folder under the name "sdra64.exe," a Win32/Zbot variant. Delete the spam and do not follow any links!

ComputorEdge always wants to hear from you, our readers. If you have specific comments about one of our articles, please click the "Tell us what you think about this article!" link at the top or bottom of the article/column. Your comments will be attached to the column and may appear at a later time in the "Editor's Letters" section.

If you want to submit a short "ComputorQuick Review", or yell at us, please e-mail us at *ceeditor@computoredge.com*.

EdgeWord: Easy, Free Table of Contents/Index for Your PDFs

"A simple way to build documents capable of generating bookmarked PDF files." by Jack Dunning

A cool thing about some PDF files is a Table of Contents with tags linking to sections in a document. OpenOffice.org does a great job of creating these PDF bookmarks.

One of the cool things about some PDF (Portable Document Format) files is the Table of Contents that may appear on the left side of the reader window with tags linking to sections in a document. It provides a quick overview/outline of the document, plus each entry is a bookmark that links directly to that portion of the PDF (see Figure 1). While this feature doesn't help much when you're printing the document, it makes reading it on a computer much easier.
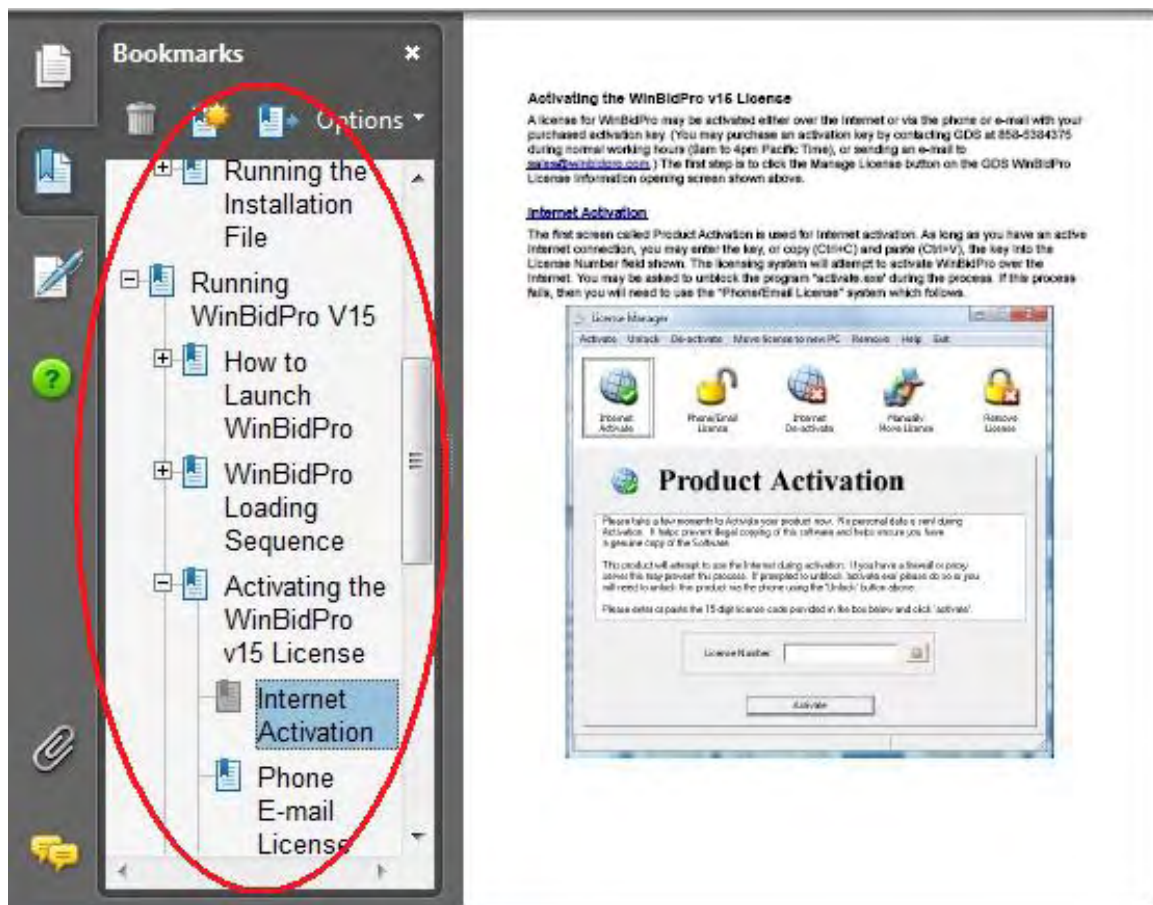

Figure 1. A PDF file with a bookmarked Table of Contents on the left side.

In Adobe Acrobat, the bookmarks can be generated automatically if the tags have been previously embedded. Otherwise, each link must be put in one at a time. Anyone who is creating PDFs of any length will want an easier way to do it. I came across a simple way to build documents capable of generating this type of bookmarked PDF file and, best of all, it's free.

I'm guessing that this type of procedure can be done in most full-featured word processing programs, but I use only OpenOffice.org Writer because it both does the job and it's free. I can't speak to Microsoft Word because I haven't owned a copy of Word since Office 97. I do own Adobe Acrobat for working with PDF files, but it is not designed to provide the functionality of a word processor. I know Adobe has other products that may be adequate for the job, but, as with most Adobe products, they probably cost an arm and a leg.

The first step is to open your document with OpenOffice.org Writer. All of the section titles that you plan to include in the PDF bookmarks, you can turn into a Heading with the Styles and Formatting feature. (Select "Styles and Formatting" from the

Format menu or hit F11.) See Figure 2. When the cursor is sitting on the heading you want to include, double-click the appropriate format heading. This will both convert the line to the proper style (editable for each heading type) and include the heading in the tags for the PDF bookmarks. (These same tags are used when generating a Table of Contents within OpenOffice.org Writer.)
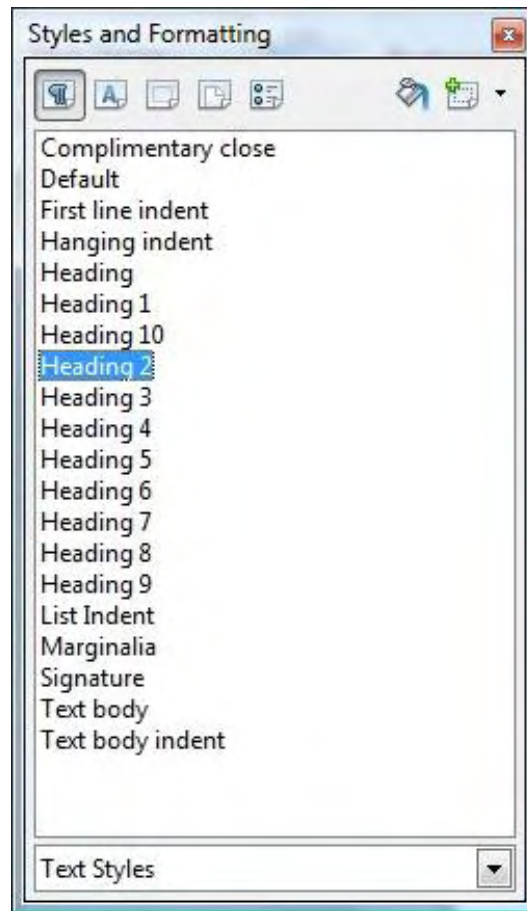

Figure 2. OpenOffice.org Writer's Styles and Formatting window.

When you are ready to generate your PDF, select "Export as PDF..." from the File menu. There are a number of parameters that may be set for the new PDF file, but the one of interest is "Bookmarks and page" in the Initial View tab (see Figure 3). When this is selected, the default view of the PDF will include the left-hand Table of Contents, which will appear when the file is first opened.
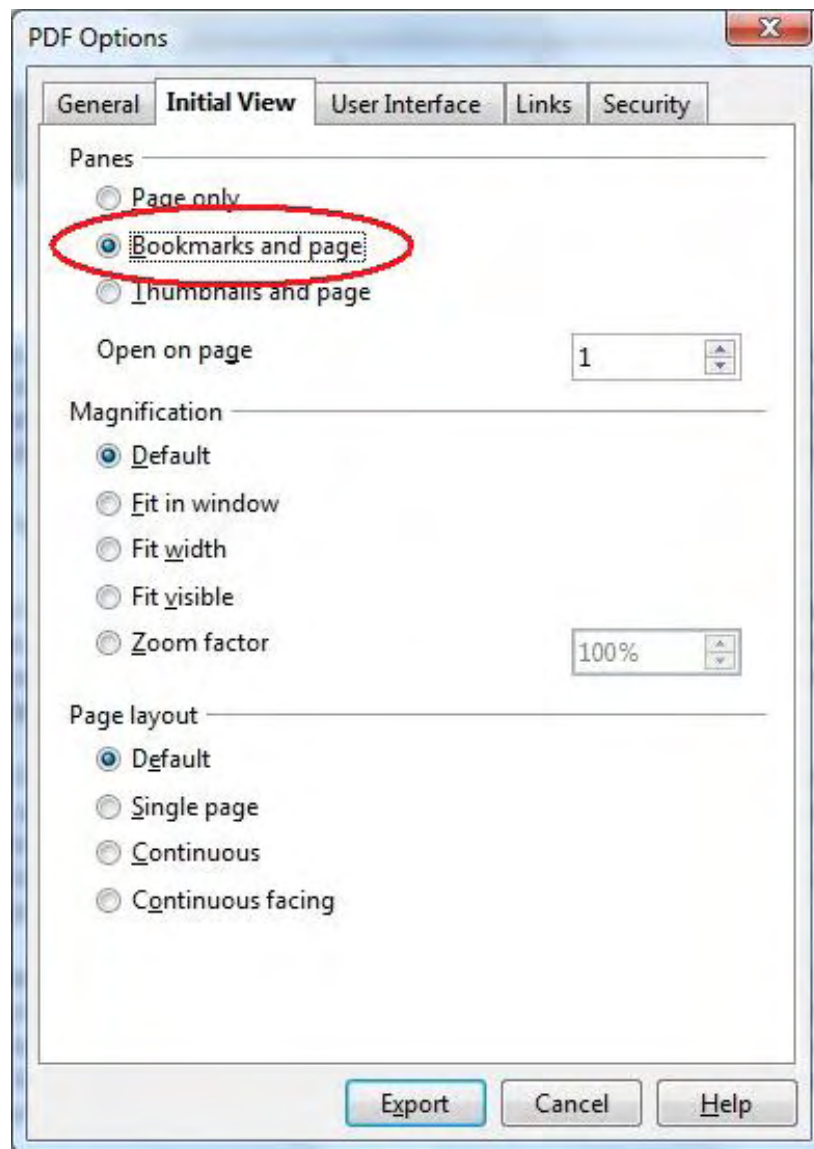
Figure 3. OpenOffice.org Writer's Initial View tab in the PDF Options window.

Click the Export button, give the file a name, and the PDF file will be created. All of the Heading tags will appear in the Bookmarks panel as both a Table of Contents and jumps within the document. Now the file can be e-mailed or posted to the Web for viewing by anyone with a PDF reader—which is practically everyone in the world (Adobe Reader).

PDF is my preferred method for sending documents. It resolves software and computer compatibility problems, and I know that the file will print exactly as it looks in the PDF. When a word processor does such a good job of creating a PDF with bookmark tags, I feel it's worth mentioning—especially since it *is* free.

Jack is the publisher of *ComputorEdge* Magazine. He's been with the magazine since first issue on May 16, 1983. Back then, it was called *The Byte Buyer*. His Web site is *www.computoredge.com*. He can be reached at *ceeditor@computoredge.com*

Editor's Letters: Tips and Thoughts from Readers

"Computer and Internet tips, plus comments on the articles and columns."
by ComputorEdge Staff

"Microsoft Security Essentials and AVG," "SyncToy for Backup," "IRS Phishing Scam," "More Characters," "Runtime Revolution?"

Microsoft Security Essentials and AVG

[Regarding the November 13 Digital Dave column:]

I'm presently using AVG free, and you can tell [readers] that it *can* be always free. Their upgrade ads do make it sound like you have to upgrade, but there is still a line somewhere on the last page where you can update your free version. Read all the print.

Thanks for your info on the MS [antivirus] app. I'll try it to avoid the minor nuisances of AVG.

-Bob Di Giorgio, San Diego

SyncToy for Backup

[Regarding the November 13 EdgeWord: A Review of Windows Data-Backup Tools column:]

I'm surprised you did not mention Microsoft's free SyncToy (*www.microsoft.com/downloads/details.aspx?familyid=c26efa36-98e0-4ee9-a7c5-98d0592d8c52&displaylang=en*). It's not really about syncing, and it certainly is no toy. It allows you to set up a backup file-and-folder tree structure with a few useful options. I set it up to mirror selected folders and files on my computer to an external drive. In subsequent runs it only copies changes since the last backup. You can view the backups at any time, since they are not hidden in a blob. You can even move files out of the backup for better organization while deleting them from your computer, without modifying your backup arrangement.

-Ron Cerrato, San Diego

[I'm glad that you brought SyncToy to my attention. I talk about it in this week's Windows Tips and Tricks column. It's pretty cool for any Windows computer. —Jack Dunning]

IRS Phishing Scam

[Regarding the November 13 Spam of the Week: Internal Revenue Service (IRS) column:]

"Scam E-mail Sends Malicious Software to Recipients' Computers" (*www.irs.gov/newsroom/article/0,,id=213862,00.html?portlet=6*)

I really wish you had checked the IRS site before starting the article with the wishy-washy "As far as I know, the IRS doesn't send e-mail notices."

The IRS *never* initiates e-mail contact with a taxpayer. Period.

-Stewart A. Levin, Centennial, CO

We used to get stuff like this every week from our local "banks," which I used to print and hand in to the genuine banks. We still get the occasional [phishing spam], millions being sent every day, but most stopped by our ISP (Virgin), our own spam filter or antivirus apps. And we always decline the offer to download the latest Adobe or Java to read a Web site we don't know. "Come in, the door's wide open!" And thanks for the advice on zip files.

-Clive, Wimborne Minster, Dorset, UK

More Characters

[Regarding the November 13 Windows Tips and Tricks: Using the British Pound Symbol (£) column:]

You indicated that the ASCII characters can be generated by entering the three-digit number from Figure 2 (000-127).

My experience is that if you enter the number without leading zeros, you will get a difference in some cases. In the case of 32-99 (and 100-126), they're the same as with leading zeros, but for those less than 32, you get a symbol versus a function (e.g., 9 is *[character does not print in this Web program]*; but 009 is tab, which is shown in parentheses in the chart). An interesting use of this is that Alt-026 is the same as Ctrl-Z (26th letter of the alphabet) in some applications like Notepad, so it performs an undo. However, since these seem to be application-specific, don't rely on them; use the documented functions.

-Rob S, San Diego

I've used charmap since Windows 3.1 and had hard-copy ASCII and ANSI tables for years and years, and they've been a godsend many a time. Nearly all of the old DOS bibles had them in the back, but in recent years they've become hard to find. Thanks for publishing them!

Some of the cybercafes down here in Mexico have non-standard keyboards, and a bit of ASCII knowledge can come in handy (@ can be anything from Ctrl-q to Alt-064; it's almost never "capital 2"). Go figure. It's odd that practically none of them have the incredibly easy-to-configure U.S. international keyboard, which allows you to input basic accents and a few symbols with punctuation-and-letter combos.

I also have IBM codepages 850 and 1250 (or whatever it is) somewhere, and they, too, come in handy from time to time.

-Werner Maurer, Rosarito, Baja California

Runtime Revolution?

[Regarding the November 13 Wally Wang's Apple Farm column:]

Wally continues to amaze me with some of his comments. This week he asks:

...how many lines of code would your favorite language need to modify the font size of text displayed on the screen? Here's how many lines of code are needed to accomplish this task in Runtime Revolution:

```
set the textsize of field "Label Field" to the thumbposition of scrollbar "Scrollbar"
```

And, of course, for anyone who writes code in an object-oriented language (which is most programming these days) the answer is one (be it VB, C# or Java):

```
Label_File.Font.Size = Scrollbar.Value
```

Granted, this is more cryptic than Runtime Revolution's code. However, this leaves me wondering about Wally's book on VB. Net 2005. He had to know about this basic functionality. Why not just say that RR performs it in a different way?

Let's see his next example:

...how much code would your favorite programming language need to search for text displayed on the screen? Here's how to do it in Runtime Revolution:

```
find text of field "Search Field" in field "Label Field"
```

First, I don't know how RR works, but when it "find"s something, what does it do with it? VB.Net handles it this way if you show the position of the text in a message box:

```
MsgBox instr(Label_Field, "Search_Field")
```

Other languages use the IndexOf field to accomplish the same thing.

I'm not really knocking RR; it's apparently just a different way to do things. But Wally, come on—don't make it sound like other languages can't accomplish the same thing just as easily once you understand the language.

BTW, from what I'm seeing, RR reminds me a lot of COBOL, which was intended to be an easier way for humans to communicate with the computer without having to learn all the cryptic commands. However, COBOL became a big mess as programmers started to make more complex programs with nested IFs and loops.

I wonder how RR can help me to create animations and sounds that I need for my next project.

-Rob S., San Diego

ComputorEdge always wants to hear from you, our readers. If you have specific comments about one of our articles, please click the "Tell us what you think about this article!" link at the top or bottom of the article/column. Your comments will be attached to the column and may appear at a later time in the "Editor's Letters" section.

If you want to submit a short "ComputorQuick Review", or yell at us, please e-mail us at *ceeditor@computoredge.com.*