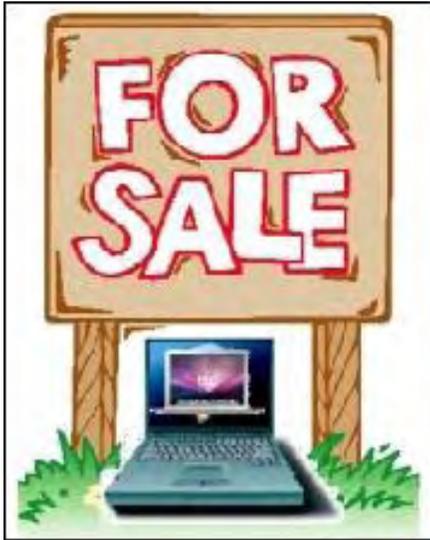# *ComputorEdge™ Online* — 11/27/09

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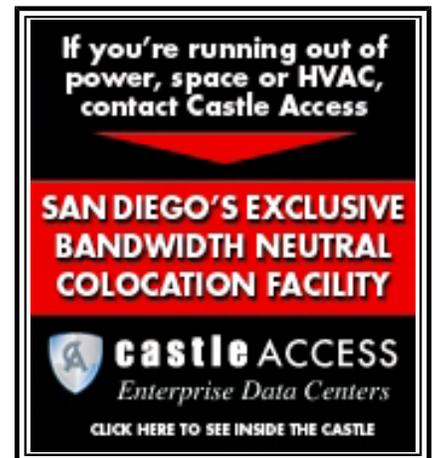
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(Click Banner)

Digital Dave

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

A reader wants to add Vista in a dual-boot configuration—without loading Vista first; what could be the cause of a "mailbox full" error when sending e-mail?; a reader is perplexed by the missing e-mail client in Win 7.

Dear Digital Dave,

I bought a new laptop with Windows 7 and want to add Vista in a dual-boot configuration. Is there any way this can be done without loading Vista first? I have tried without success.

John
San Diego

Dear John,

There are a couple of ways to accomplish this feat. The first and more traditional method is to partition the drive and install the other operating system in the new partition. The second is to install a virtual machine (all software) on your new computer. This latter approach is rapidly becoming the method of choice.

The problem with partitioning hard drives is that you must physically set aside a portion of the drive for use by the second operating system. When you boot up the computer, you actually load the operating system from that partition. While this is often done, it does not provide the flexibility that comes from installing a virtual machine.

A virtual machine is software that sets up a separate operating system area within the host system. The client operating system uses the processor and other computer features directly (not emulation). It is simpler to set up (no partitioning required) and can easily be reversed. This is now the method of choice and is commonly used on Macs for running Windows. The downside is that since the host operating system must load first, the client OS will be sharing memory. If your system is light on memory, then it may not be as fast as a dedicated hard drive partition.

If you have at least the professional version of Windows 7, then Microsoft provides Virtual PC (*www.microsoft.com/windows/virtual-pc/*) as a free download. Virtual PC should be capable of installing and running Windows Vista.

If Virtual PC won't work for you (wrong version of Windows 7), then there is a another free option in VirtualBox (*www.virtualbox.org/*). There are also free versions of commercial programs that are known to work well, such as VMware Player (*www.VMWare.com*) from VMware. If you

decide that you need a commercially supported program, then VMware has some of the best.

I would like to hear what other programs are being used by *ComputorEdge* readers for virtualization.

Digital Dave

Dear Digital Dave,

Sometimes when I forward an e-mail text, I get this message: "This Message was undeliverable due to the following reason: The user(s) account is temporarily over quota."

What's up?

Jack Bradley
Chula Vista, CA

Dear Jack,

If an e-mail bounces back to you with a message such as, "over quota" or "mailbox full," it's because the addressee, for whatever reason, either has not been picking up the mail or has not been allowing the server to delete the already-read e-mail.

E-mail servers have a limit on how much e-mail can be stored. With the amount of spam on the Internet, it doesn't take long to run out of space in an inactive account. You need to talk with the addressee about either picking up their e-mail, getting their new e-mail address, or changing the settings in their e-mail program to allow the server to delete older read e-mail.

Digital Dave

Dear Digital Dave,

I have a new computer with Windows 7. It took away my Outlook Express, and I'm unable to recover any e-mail that might have been sent to me. Bill Gates failed to mention that.

I've tried everything I know to retrieve it, but zip. I know my mail is on a cloud somewhere out there in server land. I know that because mail from me on Yahoo is sent to my account and not rejected.

Jack P.

Dear Jack,

We are so used to getting basic programs with every installation of Windows that it comes as a shock when something is missing—as is the case with Windows 7. The biggest gap has been the lack of an e-mail program in the installation. It's not obvious and can cause a lot of wasted time when searching for a way to pick up e-mail.

Microsoft does have a free download of Windows Live Mail (*download.live.com/wlmail*). It works differently from Outlook Express in that it is e-mail-account oriented rather than Inbox oriented. I noticed a few weeks back that Jack Dunning had a useful column on what's missing in Windows 7 in his Windows Tips and Tricks column. This column also offers some alternative e-mail

programs, such as Thunderbird, if you like Windows Live Mail.

Digital Dave

Picking Computer Hardware

"How much computing power do you need?" by Pete Choppin

> Whatever your specific task, the computer you buy should be suited for that task, requiring an understanding of the basic hardware components and what functions they perform.

Along with my career as an IT professional, I am also affectionately known in my family as the "resident computer person." I am often asked what computer to buy, where to buy from, which is the "best," and "Is this computer better than that one?" You get the idea.

A few months ago, one of my relatives, who by no means is a "computer person," spent nearly $1,000 on a new PC. He made some good decisions. He opted for a more reliable Windows XP operating system instead of the less stable Windows Vista (although I believe he should have waited until Windows 7 was released). He bought from a local computer vendor instead of going to a big-box store or mail-ordering online. But this doesn't change the fact that he spent almost $1,000 on a PC tower with dual CPUs, 3GBs of RAM and a 200+ GB hard drive—to check e-mail, surf the Web and use Microsoft Office.

I thought it was kind of a waste. And I tried to tell him as much, although he loves his new machine so much that he didn't listen to me. But then I thought about my own recent purchase. I put together a custom PC with an ASUS P5Q Deluxe system board, Intel Core 2 Duo CPU, 4GBs of RAM and 300GB hard drive. What was I, the family's resident "computer person," going to do with this machine? Check e-mail, edit Web pages, and write articles for *ComputorEdge*. I had to consider, was I wasting money too? Or do I truly need this much computing power?

You do have to consider what your primary purpose will be when you shop for a computer. Will you be doing graphic design work that requires high-end graphics and powerful processing capabilities? Will you be generating complicated 3-D models and rendering textures, spatial regions, and CAD designs requiring massive calculations? Do you need a system for recording and editing professional music? Or will you simply be browsing the Internet, sending and receiving e-mail, using a word processor, playing music and

possibly watching a DVD movie once in a while? Whatever your specific task, the computer you buy should be suited for that task. Let's talk about some basic hardware components and what functions they have.

The Processor (CPU)

Also known as the CPU (Central Processing Unit) and sometimes referred to as the "brains" of the computer. Actually, the processor is really just a very fast calculator. Processors are rated by their clock speed, which is (today) measured in gigahertz, or abbreviated GHz. The processor affects mainly anything that requires a high degree of calculation or mathematics to run. We refer to these applications as "processor intensive." These would include CAD and engineering design applications, as well as several scientific or problem-solving software applications that require repetitive or complicated mathematical calculations. You might think this is a key component to how fast a computer performs, but you would be surprised: Depending on what you are running, the processor may have less to do with the computer performance than you think.

Memory (RAM)

There are many types of memory that computers can use; so many that it would take an entire article to explain. Suffice it to say that memory (often referred to as RAM or Random Access Memory) is a temporary storage space in your computer. The word "temporary" is crucial here. Information stored in memory remains there only as long as there is power to the computer. Once the computer shuts down, any data that was in memory is lost. Memory is measured in bytes. Without going into the long history of how bytes came to be, let's just say that a byte is a single unit in computer measurements (or one character of text). The next step is the kilobyte, then megabyte, then gigabyte, and at present we are using terabytes of information. Memory today is being sold by the gigabyte.

The most common type of memory you will see in use today is called DDR2. DDR2 is fast, reliable and still widely available. The next type that is now beginning to see more popularity is DDR3. DDR3 is the next generation of RAM; however, if you want to use this memory you will have to buy the system board that is compatible with it. System boards that now take DDR2 memory cannot use DDR3, and vice-versa.

A good rule of thumb is get the most RAM you can afford. Especially with Windows operating systems, you can never have too much memory (there was a limit of just over 3GB RAM for Windows XP. This has been fixed with 64-bit Windows 7).

Hard Drive

The hard drive is another one of those components on which we could spend a long time, but I would like to make a few points here. First is reliability, or rather the lack thereof. There is no such thing as a fail-proof hard drive. Your hard drive will fail. It is not a question of if, but of when. I cannot emphasize too much the importance of a reliable backup, and entire articles have been written on the subject. It is worth pointing out, however, that the hard drive, with all its problems and non-reliabilities, is
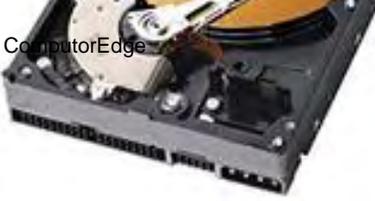
a necessary and vital component. We come to depend on our hard drive and can sometimes become complacent. We forget the inevitable fact that the hard drive will fail one day. Just have a backup of things you need saved and you will be fine.

The good news is hard drives really are cheap for the amount of space you get. The first drive I ever purchased was a 150MB drive. That much space today is laughable. Drives now are in the terabytes, which is more space than I can comprehend. This is one of those areas where you need to evaluate what you will be doing with your computer. If all you will be doing is some Web browsing and word processing, you will not need the largest hard drive made; 150GB will be more than adequate. But if you plan to edit large format images or store full-length movies, you may want to consider something in the 500GB range (or more). Now, if you do end up needing something larger down the road, you can always get an external USB hard drive. This can be connected as an extra hard drive for data storage you did not plan on or did not anticipate.

Video

The video components of your computer (video monitor and controller card) control the display of things such as video games, movies and online Web videos. Many motherboards come with a decent video controller; however this is not usually adequate for intense video applications such as 3-D graphics, video editing or high-end video games. For these applications you will need an expansion video card that has much better video capabilities and more specialized video memory. These cards can either be installed when you purchase the computer or after the purchase. If the motherboard already has a video controller onboard, you simply disable the onboard controller in the system settings and then install the expansion card.

What's the Bottom Line?

So how much will all this cost? Actually, the cost of a new computer can depend on many things. What is in the computer? What is the quality of the components? Is there a warranty or service contract? What software comes installed? All these factors can affect the price of the computer. Much of it also depends on what is important to you—the customer. Is the hardware performance most important, or the service of the company where you buy the computer? Is it the price? Is it the name behind the product? Sometimes you can get a lot of these features in your computer purchase, and sometimes they come at a high price.

Bare Bones

There is a concept in the computer hardware world called "the bare-bones computer," which is a computer that is stripped down of everything that would be non-essential to run the computer; only a basic machine and nothing special. No extras. Nothing more than a basic PC that could be turned on and booted up—that would be a bare-bones computer. You might find these priced anywhere from $400 to $500. The idea is to start from one of these basic computers as your base and build from there, knowing that anything you add to this will, of course, increase your total cost of the computer.

Many computer hardware companies will offer this type of shopping method. They allow you to "customize" a computer by offering you selections of components. You begin with the bare-bones

computer, and as you make your selections, you see your price go up. The benefit of this type of shopping is that you can add and subtract components as you go along, and you really can customize your computer. Also, you are pretty much assured that the components you are offered are all compatible, one with another, so it takes the guesswork out of selecting compatible computer parts.

From time to time I like to experiment and take a trip down dream land and build my "dream" computer this way—just to see how much it would cost to buy my ultimate PC. If you try this, just be careful not to turn that dream into a reality unless you are ready. The price for my dream computer: $3,500.

Questions

Here are some questions people frequently ask me about computer shopping:

What about the "Big Name Computers" at the "Big Box Stores"?

These are Dell, HP, Compaq (which is HP) and IBM machines available either online or at the big stores such as Best Buy and Costco. Should you buy from them?

Well, I don't. This is because I don't like dealing with an enormous company where I am just one of thousands of customers. The customer support tends to be lousy, you don't usually get the selection that you can from a local computer store, and frankly, I don't think their product is really all that terrific. However, I have talked with some people that have been very satisfied with their Dell computer. Take that for what it is worth.

What about the Mac?

I like the Mac. I want a Mac. And as soon as I can afford one, I will get one. They run about twice the price for about half the computer, but they are rock solid and really cool. If I could get one today, I would.

I have been told, "Buy as much PC as I can afford." Is that true?

In general, yes. I do recommend that strategy for two reasons. First, PC prices are still dropping like crazy. Second, I have tried cutting corners before, and my personal experience is that it just does not pay. You do, in fact, get what you pay for with computers. Put as much money as you can afford into your computer. Do not buy cheap, off-brand components. You will be sorry if you do.

How often should I replace my computer?

Every four to five years. That is about as long as technology will allow you to function without changing your computer. Beyond that, your computer will become truly obsolete—I'm talking beyond the definition of the power user.

Should I get a laptop?

How mobile are you? That, in my mind, is the defining point. Yes, it is true that today, a laptop can do about anything a desktop can do. But what you are paying for is the ability to carry the computer around. It is that simple. Laptops are, comparatively, more expensive than desktops and they tend to be less reliable. The only real trade-off is that you can take laptops places. So if you do need to go places, and you do a lot of work at those places, then I recommend a laptop. Otherwise you are wasting your money.

If you have other questions or comments, feel free to submit them and I will be more than happy to try to give you an answer.

Resource

Tom's Hardware Guide (*www.tomshardware.com/theme-build-your-own,156.html*)—The definitive guide to all things hardware.

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*

Picking Operating Systems

"Making a decision on your computer's basic configuration." by Pete Choppin

> Your choice of operating system determines to a great extent the applications you can run. What are the pros and cons of today's common operating systems?

At the most basic level, the computer operating system provides the instructions or configurations for the hardware to communicate and operate with the computer software. More than this, operating systems provide a software platform on top of which application programs can run. The applications must be written to run with a particular operating system. Your choice of operating system, therefore, determines to a great extent the applications you can run. Let's discuss the pros and cons of the more common operating systems.

Microsoft Windows

Microsoft Windows—the most popular operating system—is easy to use and familiar. It is standardized to the point where specific requirements must be met in order to obtain the "Designed for Windows" status. Even with high requirements, developers are eager to obtain this status because of the value and recognition that comes with it. More and more software developers write their applications to Microsoft standards, creating a very recognizable, easy-to-use interface that helps those less comfortable with computers to work with more applications.

But along with this popularity comes a price, and not only in dollars. Windows often comes under security and virus attacks because of wide use and popularity. Microsoft often releases its products in anticipation of releasing security updates to correct security vulnerabilities, so until Microsoft can patch its OS sufficiently, stability and security can be a problem.

It seems that Microsoft has this annoying habit of releasing products that seem to be not quite ready for prime time. Ever since the beginning versions of Windows, it appeared that for every release of Windows, a subsequent sequence of service packs and security patches always followed. Eventually, a relatively secure OS is achieved, but this can sometimes take months or years.

When Windows XP was released, some of the very same complaints came out that were said about Vista. It was too slow, looked like a cartoon OS, too much like a Mac. It reminds me of those PC-versus-Mac commercials that are out (which I love, by the way) that depict the PC, which has the OS that is just re-released every few years with the same promises and the same complaints every time. I suspect the same thing will probably happen with Windows 7 once more users and companies become more familiar with the new system. Microsoft has all but admitted that Vista was little more than an embarrassing mistake, and that Windows 7 is its response to the backlash that ensued. Windows 7 will be the standard for home and business computer platforms just like the previous releases of Windows.

Macintosh

The MacBook Pro is the leading edge of innovation and is finally giving the PC a run for its money. But you cannot separate the software from the machine, and the fine line between form and function is almost invisible. I don't think it is possible to talk about the Mac

software without first describing the hardware.

Instead of building the case out of a bucketful of individual pieces (case bottoms, tops, interior frames, sub assemblies, support structures, etc.), Apple instead used a single base of aluminum, which is then machined to produce a one-piece, unibody design. That's the simple secret: The MacBook Pro's case is a single piece of aluminum. The result is a very strong, very lightweight notebook.

Everything else we know—the Macintosh has a solid, secure operating system built on the openBSD Unix-like architecture in the unique and innovative Apple way. The question isn't whether you should get a Mac; it's which size do you want?

Be prepared to pay a premium for this innovation. It doesn't come cheap. A MacBook Pro will cost twice as much as a PC, comparing "apples to apples" (shameless pun).

Linux

Linux is perhaps the most misunderstood of the operating systems. Maybe it's the mysterious nature of the software or the stoic, no-nonsense attitude Linux gurus seem to carry, but Linux should not be ignored as a viable alternative to commercial operating systems. Microsoft isn't ignoring Linux. Last year it made several efforts to bridge the gap between Linux and closed-source software. The jury is still out on whether there have been any positive results.

The question is, "Can Linux be a real desktop solution for business and home users?" Time and time again, Microsoft shows that it is not a question of money, but of usability and, let's be honest—Linux is struggling to stay in the race. If it were not so, consumers would not continually return with wallet in hand eager to purchase the next release of Windows, even though there is a free alternative available. You simply cannot sell that many products over and over again without offering some value to the consumer, but that's an argument for another article (*webserver.computoredge.com/online.mvc?issue=2741&article=edge*).

So where does that leave Linux? Actually, many IT professionals, such as myself, still hold to the belief that Linux is improving and getting easier all the time. Eventually, much of the world will be using some form of Linux and we, the IT professionals, will be there to support it.

32-bit Versus 64-Bit Operating Systems

Here is a short list of what can and cannot support 64 bit:

32-bit

• Windows XP (Home and Professional) and all prior versions of Windows
• Windows Server 2003

64-bit

• Windows XP Professional 64-bit Edition
• Windows Vista*
• Windows 7*
• Windows Server 2008

• All Linux and Unix-like systems*
• Mac OSX (Snow Leopard) systems*
* These systems also support 32-bit

Rather than going into a long, boring, technical explanation of the differences between 32-bit and 64-bit architectures, it may be more helpful to discuss the pros and cons of using one over the other, or why and when you may want to use these operating systems.

32-bit operating systems have been the most widely used for many years now. Primarily this is a limitation of application software. There are still just not very many 64-bit applications available, nor are there very many 64-bit drivers written to support the hardware. So the availability of software to take advantage of the 64-bit platform is quite limited for the average user.

Businesses and organizations that use specialized hardware and software, such as scientific groups and universities, may be able to take advantage of 64-bit operating systems and hardware. For example, we run Microsoft Exchange Server 2007, which *requires* 64-bit architecture, both hardware and software, and therefore in order to install the server we had to purchase a completely new and expensive system.

Fortunately, the average user does not need to make this kind of a purchase. However, there are always more applications being written for 64-bit architecture. If you are anticipating taking advantage of this in the future, it may be worth investing in the hardware and the operating system to support it.

What to Look for in an Operating System?

When considering an operating system, it is most important to think about how you intend to use the computer. After deciding your computer's primary function, you will need to decide what kind of networking and administrations tools you need and the level of security you desire.

Below are what I consider essential criteria used to evaluate operating systems:

Application Software

The number-one consideration in which operating system you pick is which applications it will run. Other than price, one reason Windows maintains a lead over Macintosh is because of the massive amount of software available for Windows computers. Even Mac owners will often install Windows in a virtual machine on their computer to run Windows software. The same is true for Linux, although most Linux software tends to be free.

Home and Office Use

Assess the operating system in terms of how well it supports general home use; for example, it should have basic Internet security and be easy to use. The OS for office or business use needs sophisticated Internet security and the capacity to network, and ought to include administration tools.

Multimedia Use

Some operating systems are designed to entertain; these can play/record television, burn DVDs, and can support HD video and music without supplementary software.

Security

Many operating systems should provide frequently updated security features such as firewalls, pop-up blockers, antivirus and anti-spyware software and more. Operating systems for business or network use require additional security and administrator tools.

Networking

Business and home operating systems can be used in a network. These systems should offer administration tools and security.

Ease of Use

All operating systems should be straightforward. Menu systems, controls, functionality, device and settings should be placed in logical and easy-to-find locations. Help systems and search functions should be useful and readily available.

Technical Help/Support

Since operating systems perform numerous functions, above-average support is needed. Is there a support network you can turn to? Does the online help function provide useful support? Does the company or group where you obtained the system offer any support?

Resources

Windows Secrets (*windowssecrets.com/*)—A non-biased newsletter that provides tips for running Windows as well as advisories on the latest security updates. Free weekly news with paid optional memberships available.

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*

Marketing Mythologies about Macs and PCs

"Cupertino and Redmond have it all wrong." by Barry Fass-Holmes

> Cupertino's and Redmond's competing advertisements are simply wrong because the dualistic view of computers (and their users) is wrong. Rather, Macs are PCs.

According to Cupertino's and Redmond's advertisements, there are two kinds of computers—Macs and PCs. These ads aim to humanize a dualistic view of computers by having actors introduce themselves as "I'm a Mac" or "I'm a PC." The implication is that two kinds of people (us vs. them) parallel the two kinds of computers (Macs vs. PCs). This dualistic view of computers, and by extension the people who use them, is based upon allegedly inherent differences between Macs and PCs.

Cupertino's and Redmond's ads imply that an array of differences exists between Macs and PCs, and we are told that the top three include compatibility, cost and choice. The "laptop hunter" ads (*www.microsoft. com/windows/watchtheads/video/laurenandsue/default.aspx*), for instance, want you to believe that 1) PCs are more compatible than Macs, 2) Macs are more expensive than PCs, and 3) there is more PC software to chose from than Mac software (also, see Redmond's retail talking points at AppleInsider (*www. appleinsider.com/articles/09/09/08/microsoft_unleashes_retail_talking_points_attacking_linux_macs. html*)).

The ads are wrong, however, and the goal of this article is to explain why. In a nutshell, Cupertino's and Redmond's advertisements are wrong because the dualistic view of computers (and their users) is wrong. Rather, Macs are PCs.

Compatibility

Once upon a time, the primary criticism against Macs was their lack of compatibility. This critique was attributable to hardware components that Apple used in building Macs. Computers that Apple built between 1984 and 2005 had central processing units (CPU) made by Motorola or IBM that used a different instruction set than competing CPUs made by Intel or AMD. Consequently, Macs equipped with Motorola's 680x0 or IBM's "G" series CPUs required specially written and compiled software that was different from the software that ran on computers equipped with Intel or AMD x86 CPUs. This situation led to the primary criticism against Macs that went something like "they run proprietary software on proprietary hardware" where "proprietary" was just another word for "incompatible."

Fast forward to today, and it might be safe to say that Macs now are more compatible than competitors' computers. The reason is that Apple, for about four years now, has been producing Macs with the exact same Intel x86 CPUs that are in competitors' computers.

"Wait just a moment," you might be thinking. "Macs have other hardware and licensing proprieties that require specially written and compiled software programs that are different from the programs written and compiled for other computers." And you'd be correct. However, thanks to commercial and open-source virtualization programs, Macs can run just about any program that competitors' computers can run.

What are virtualization programs? They are software that writes the necessary code and files for a virtual machine, which is a software-based computer running on a hardware-based computer. In other words, a virtual machine (*en.wikipedia.org/wiki/Virtual_machine*) is "a software implementation of a machine (i.e.,

a computer) that executes programs like a physical machine."

Virtualization is different from, and not a synonym for, emulation. Whereas a virtual machine natively uses a computer's CPU and other hardware components to run its own operating system, an emulator (*en. wikipedia.org/wiki/Emulator*) translates the instructions for a particular CPU into the corresponding instructions for a different CPU. A virtual machine on an Intel-based computer executes Intel-based instructions without translation, for example, whereas an emulation on an Intel-based computer executes Motorola- or IBM-compatible instructions after translating them into Intel-compatible instructions. This explains why virtual machines are faster than emulators.

With virtualization software, Intel-based Macs can natively run just about any program written and compiled for competitors' computers. A Mac can run Access, Outlook, and WordPerfect—in addition to various flavors of the Windows operating system—in a virtual machine, for example.

Virtualization programs are available for free or for prices less than $100. Boot Camp is Apple's product that comes with Mac OS X Leopard and Snow Leopard. This program creates the necessary files that will run Windows XP or Vista (Windows 7 support (*support.apple.com/kb/HT3920*) should be available by the time you're reading this article). After configuring Boot Camp and installing Windows, the Mac becomes just another Windows box (see Figure 1). Several of my co-workers transparently boot up Windows every day on their Mac minis or iMacs just as if they were booting up a Dell, HP, or Sony computer instead. I have not tried Boot Camp because (among other reasons) it supports booting into Mac OS X or into Windows, not both simultaneously.

Figure 1. Currently shipping Intel-based Macs natively run Windows and programs written for Windows, thanks to BootCamp software preinstalled with Mac OS X.

If you want/need to boot into Mac OS X and Windows simultaneously (with the latter running in its own application space under Mac OS X), a free, open-source alternative that supports this feature is VirtualBox

(*www.virtualbox.org/*). VirtualBox runs Windows and Windows programs (or potentially any flavor of Linux (*www.tuaw.com/2009/09/07/how-to-set-up-ubuntu-linux-on-a-mac-its-easy-and-free/*)) natively on Intel-based Macs.

I installed VirtualBox on a unibody MacBook Pro several months ago with the intention of running a legal copy of Windows 98 so that I could use the Windows version of my favorite statistics program (this program was bought out almost a decade ago and killed by a large software publisher without an update for Mac OS X compatibility). Windows 98 was a prevalent version of Redmond's OS at the time when the statistics program was last updated. Although it is possible to successfully install and run Windows 98 in a VirtualBox virtual machine on an Intel-based Mac (*forums.virtualbox.org/viewtopic.php?f=2&t=9918*), my efforts flopped (see Figure 2).
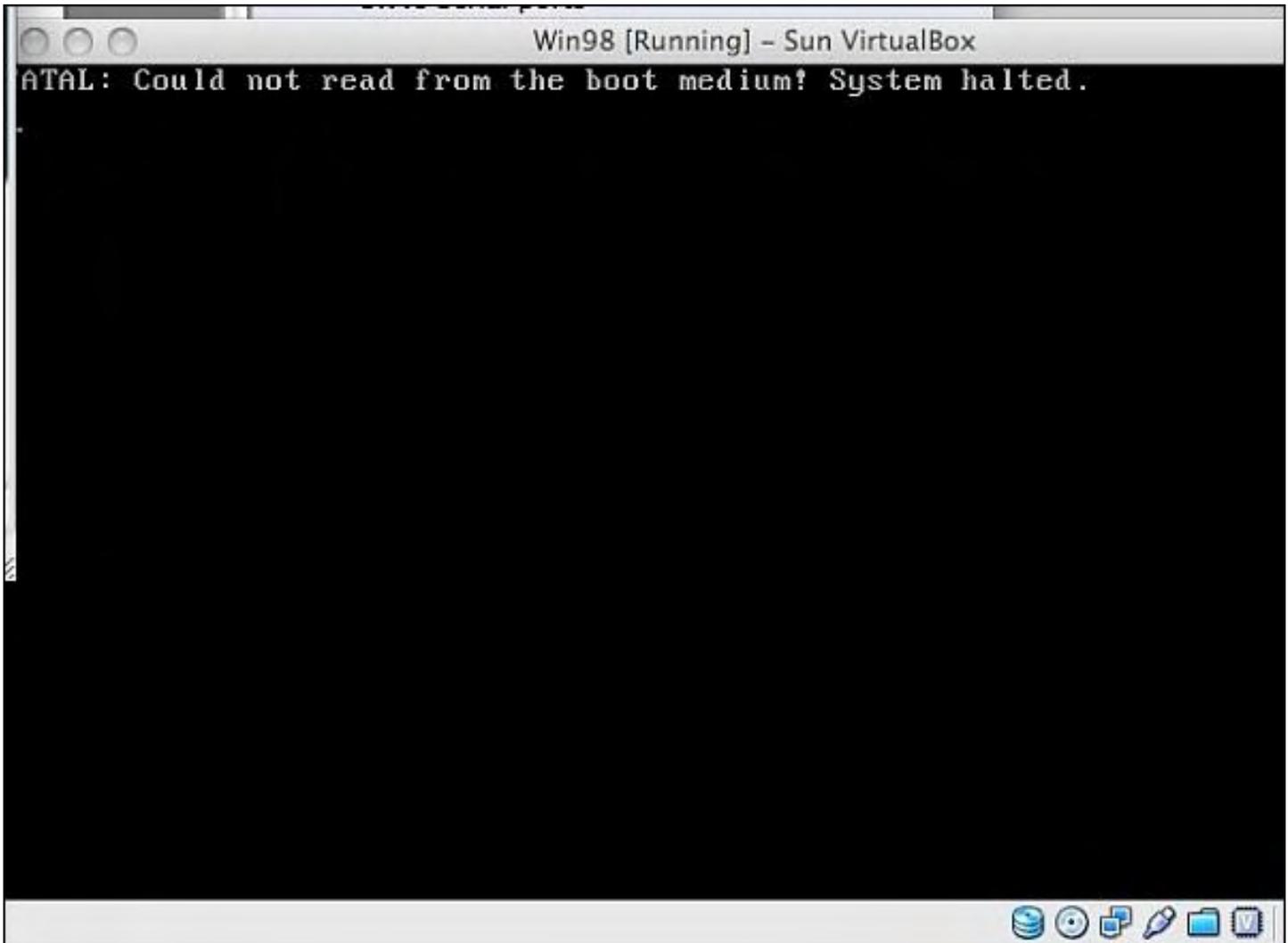

Figure 2. Although Windows 98 can be installed and run in a VirtualBox virtual machine on an Intel-based Mac, this screen capture shows what can happen in the absence of the proper installation conditions.

In case you're thinking that the solution to this problem would be to use a more recent version of Windows (e.g., NT, XP, or Vista), this idea brings up other weaknesses of running any flavor of Windows on a virtual machine under Mac OS X using VirtualBox or the commercial virtualization products (e.g., BootCamp; Parallels Desktop; VMware Fusion). For instance, a virtual machine under Mac OS X is just as susceptible to viruses, worms and spyware as any other PC. Mac OS X, by contrast, is immune from these Windows nasties because they specifically target EXE and other files that do not exist in Mac OS X, hence

will not run or infect a Mac OS X installation.

Rather than purchasing and fussing with any recent version of Windows on a virtual machine (or a cheap PC), I turned to CrossOver for Macintosh (*www.codeweavers.com*). This $70 program is a commercial version of WINE (Wine Is Not an Emulator), the open-source Unix project that uses its own DLLs and X-windowing environment to run Windows applications without purchasing, installing, or running any flavor of Windows (details at WINE HQ (*www.winehq.org/*)). Luckily, the Windows version of my favorite statistics program installs, launches, and actually runs under CrossOver (see Figure 3) despite the absence of official support by CrossOver's developers. However, it runs with several usability glitches that includes an installation process that requires a trip to Mac OS X's Terminal application (*www.codeweavers.com/ support/wiki/CXOfficeHybridMacMount*) and an annoying problem with accessing the menubar that can be worked around but gets very stale very quickly.

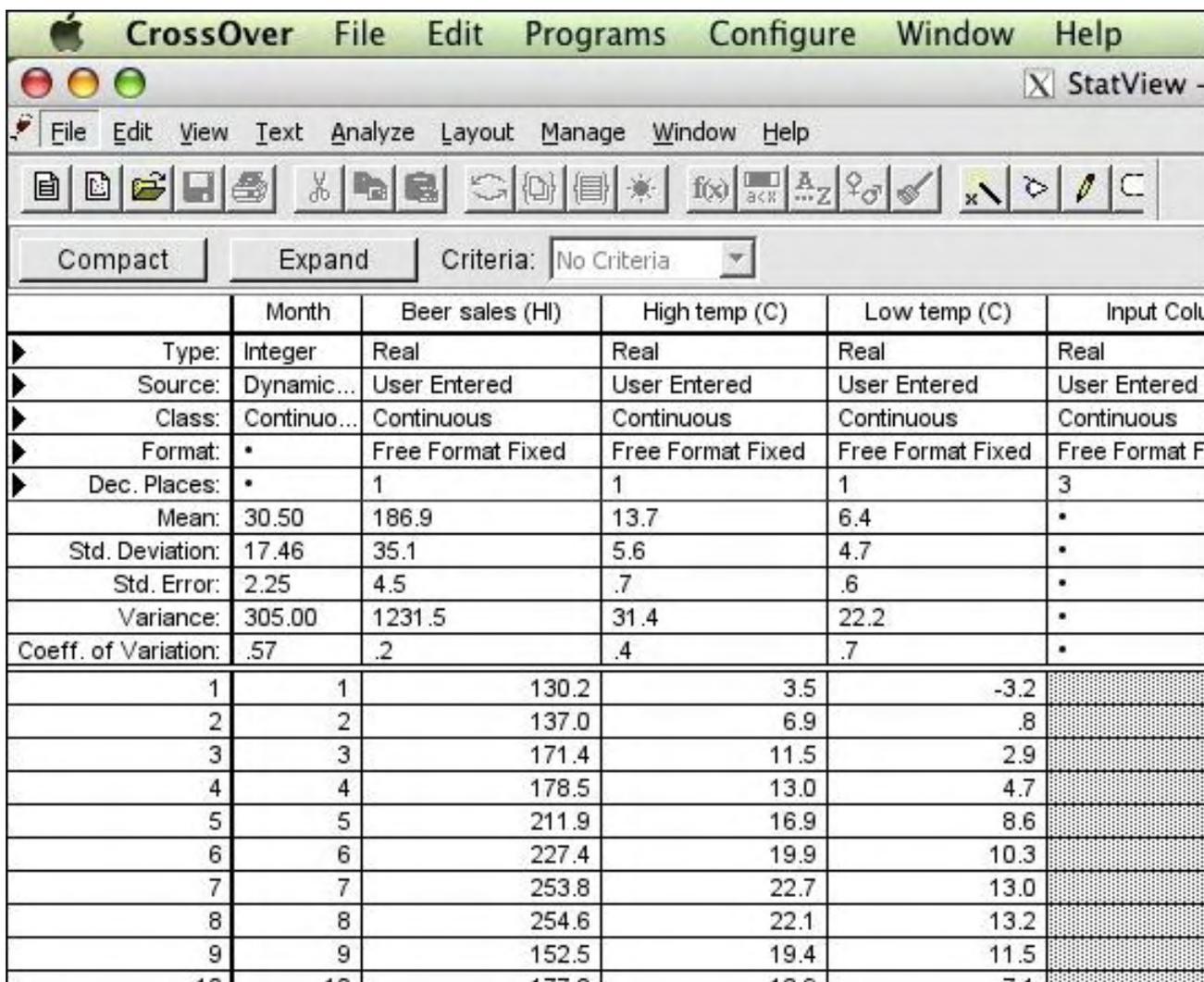|	Month	Beer sales (Hl)	High temp (C)	Low temp (C)	Input Colu
Type:	Integer	Real	Real	Real	Real
Source:	Dynamic...	User Entered	User Entered	User Entered	User Entered
Class:	Continuo...	Continuous	Continuous	Continuous	Continuous
Format:	•	Free Format Fixed	Free Format Fixed	Free Format Fixed	Free Format Fi
Dec. Places:	•	1	1	1	3
Mean:	30.50	186.9	13.7	6.4	•
Std. Deviation:	17.46	35.1	5.6	4.7	•
Std. Error:	2.25	4.5	.7	.6	•
Variance:	305.00	1231.5	31.4	22.2	•
Coeff. of Variation:	.57	.2	.4	.7	•
1	1	130.2	3.5	-3.2	
2	2	137.0	6.9	.8	
3	3	171.4	11.5	2.9	
4	4	178.5	13.0	4.7	
5	5	211.9	16.9	8.6	
6	6	227.4	19.9	10.3	
7	7	253.8	22.7	13.0	
8	8	254.6	22.1	13.2	
9	9	152.5	19.4	11.5	

Figure 3. The Windows version of my favorite (but terminated) statistics program runs under CrossOver for Macintosh, but has some usability issues which put a damper on productivity.

In addition to Mac OS X's compatibility with Windows, Windows programs, and Linux via virtualization software, Mac OS X also is compatible with programs written for older versions of Mac OS. This is accomplished with an open source emulator called SheepShaver (*www.emaculation.com/forum/viewtopic. php?t=5567*) (Figure 4).
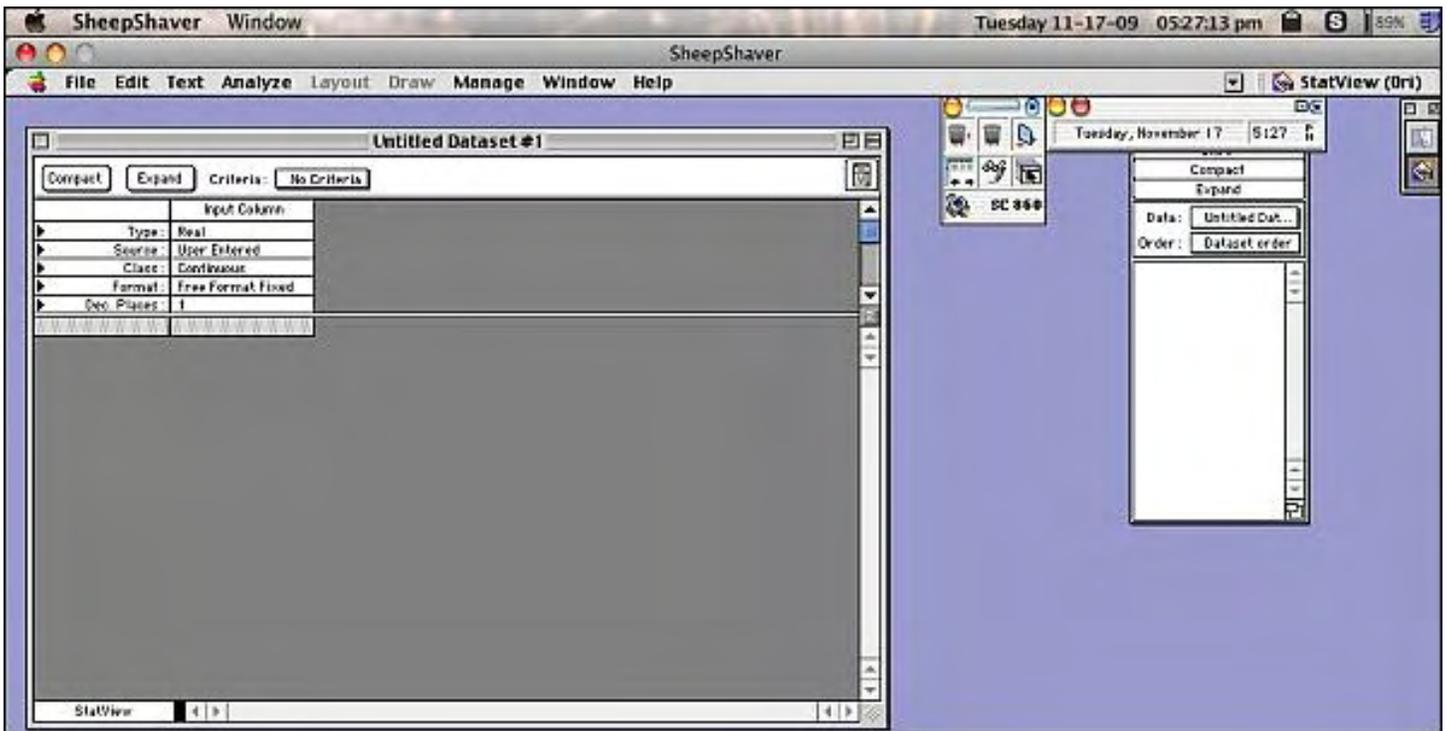
Figure 4. The classic Mac OS version of my favorite (but terminated) statistics program runs without any hitches (within the scope of my testing) under the open-source emulator SheepShaver for Macintosh.

In summary, today's Intel-based Macs are more compatible than ever before. Out of the box, they are equipped to natively run Windows and Linux operating systems plus the programs written and compiled specifically for those operating systems. Additionally, with freely available emulation software, today's Macs also are compatible with programs written and compiled for yesteryear's Motorola- and IBM-based Macintosh. Today's Intel-based Macs therefore are at least as compatible as, and in some ways perhaps even more so than, other brands' PCs. This is because today's Macs are PCs.

Cost

The "laptop hunter" ads would lead you to believe that Macs are more expensive than PCs. I guess it depends upon the criteria for comparisons. Today's Macs definitely are expensive compared to a bottle of water, boxed lunch, or package of underwear. Conversely, they definitely are less expensive than a new yacht, SUV, or Microsoft-certified IT support person (aka "headcount"). If Macs do qualify as "expensive" compared to any corresponding product made by Dell, HP, or Sony, then Macs are expensive PCs.

One sidenote on the topic of cost and what qualifies as "expensive"—when consumers purchase a new PC, the cost of an operating system is factored into the PC's total cost. Most other PC brands come with Windows preinstalled, while Macs come with Mac OS X preinstalled. If you were to purchase a copy of the current version (7) of Windows separately (for whatever reason), you first would need to decide which variant to purchase. There are six variants (*www.microsoftstore.com/s/windows7?WT. mc_id=pointitsem_win7_buy&WT.srch=1*)—Windows 7 Home Premium (Full), Windows 7 Professional (Full), Windows 7 Ultimate (Full), Windows 7 Home Premium (Upgrade), Windows 7 Professional (Upgrade), and Windows 7 Ultimate (Upgrade). These variants range in price from $79.99 (Home Premium Upgrade) to $219.99 (Ultimate Full). If you were to purchase a copy of the current version (Snow Leopard) of Mac OS X separately (for whatever reason), you would have a simple decision and a single price because Snow Leopard comes in only one variant for home, professional, or ultimate; and it costs $29.

For readers interested in server software, a comparison between Snow Leopard Server's budget friendly price and Microsoft's expensive server software is at AppleInsider (*www.appleinsider.com/ articles/09/10/14/inside_mac_os_x_snow_leopard_server_apples_server_strategy.html*).

In sum, applying the same criteria and definition used to characterize Macs as "expensive," we would need to describe Windows 7 as expensive. If such a thing as an "Apple tax" exists, then a "Microsoft tax" does too.

Choice

The "laptop hunter" ads would lead you to believe that more software written and compiled for other PC brands is available to chose from than for Macs. This claim is wrong because, as explained earlier in this article, Macs natively run any flavor of Windows and any program compiled and written specifically for Windows.

These ads also would have you believe that there are more PCs to chose from than Macs. While it is obvious that Dell, HP and Sony separately and jointly offer more PC models than Apple's stable of Macintosh models, this claim is potentially deceptive. Macs, like other computer brands, are available in portable, desktop and server models. Portable Macs come in a home/student model at an entry-level price (MacBook) and a professional model at a high-end price (MacBook Pro). Similarly, desktop Macs come in a home/student model at an entry-level price (iMac) and a professional model at a high-end price (Mac Pro). The server Mac (Xserve) comes in a single, rack-mount design. All Macs are available in standard configurations (with regard to CPU speed, amount of RAM, and hard drive capacity) or customized, build-to-order configurations. Rather than describing this lineup as "less choice," I think of it as less confusing than the dizzying array of other brands' models.

Conclusion

In summary, Macs are PCs. All currently shipping Macs come equipped with the same Intel CPUs as other PC brands, and thus are just as capable of natively running Windows, Linux, and programs specifically written and compiled for these operating systems as other PC brands. Some Mac models are more expensive than some other brands' corresponding models, some are the exact same cost, and others have a lower price tag; it depends upon how they're equipped and whether you factor in other software that comes preinstalled (Macs ship with an integrated e-mail client, calendar program, and Apple's iLife suite of consumer software that includes iPhoto, iMovie, iDVD, iWeb and GarageBand; other brands ship with a hodge-podge of trial versions of third-party products that collectively are more of a hindrance than an enhancement).

If I were in charge of Cupertino's and Redmond's advertising accounts, I'd scrap all of the existing advertisements and talking points because they do little more than misinform customers. I'd replace these ads with ones that tout the fact that anyone who buys a Mac and needs to run software specifically written and compiled for another operating system could also buy a copy of Windows to run natively on it, and vice versa. This could be a Win-Win ad for Cupertino and Redmond.


Barry Fass-Holmes has been reviewing products for *ComputorEdge* since 2003. He previously worked as a software support representative and quality assurance analyst in San Diego. His product reviews are available in *ComputorEdge's* archives and at his Web site (*homepage.mac.com/barryfhphd/custom/ art_comp.html*).

Windows Tips and Tricks: Recording Played Audio

"A Recording-Sound Workaround" by Jack Dunning
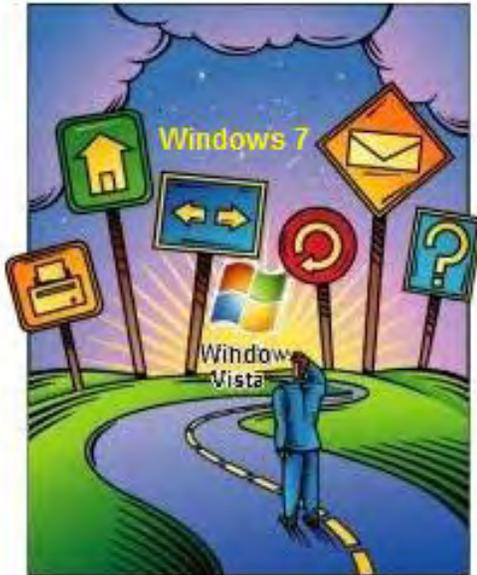
If you would like to record audio that's coming over your computer, just clicking the Record button isn't going to do the trick in Windows 7 and Vista. However, there is a way to start copying all those sounds that come out of your computer, but it is a little obscure.

One of the things that was much easier in Windows XP than Vista or Windows 7 was recording sound that came over your computer. The Sound Recorder program had much more functionality and allowed you to pick the input source within the program. This is not so in the Sound Recorder program for Windows Vista and Win 7 (see Figure 1). There are only two functions: "Start Recording" and "Stop Recording." When you stop recording, a dialog box will open to save the generated Windows Media Audio file (WMA)—the only format available.
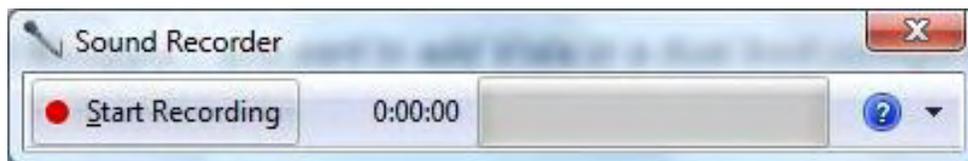

Figure 1. Sound Record program in Vista and Win 7.

If you would like to record audio that's coming over your computer—say a Skype conversation (not legal to record in all states)—just clicking the Record button isn't going to do the trick. The Sound Recorder defaults to the installed microphone and you can't change it in this program. (I think the reason that Microsoft has cut back on the ease of recording audio is because the music industry is terrified that people will copy the audio from all the music videos on YouTube.) However, there is a way to start copying all those sounds that come out of your computer, but it is a little obscure.

The first thing you need to do is make the computer's audio mixer (the internal sound card) the default device. This is done through Sound in the Control Panel. (Open the Control Panel, select Hardware and Sound, then click the Sound heading. The Sound window will open as seen in Figure 2. In Classic View, double-click Sound in the Control Panel. Or, as an easier alternative, type "sound" into the Start Search field of the Start menu and select the Sound program from the list.)

Figure 2. The Windows Sound program.

The next step is to select the Recording tab. As can be seen in Figure 3, there is no mixer showing in the list of recording devices, only microphones. Many people might give up at this point because the solution is still well hidden.

The secret is to right-click in the field area of the window. This will open an option menu similar to Figure 3. Since the default for the mixer, Stereo Mix, is "disabled" and Microsoft by default hides all disabled sound devices, the right-click is necessary to "Show Disabled Devices."

Figure 3. The Windows Sound program with the Recording tab selected. A right-click in the window will open a menu that allows the showing of disabled devices.

Once Show Disabled Devices is checked, the built-in mixer should appear, although faded. The next two steps are to right-click on the mixer and select Enable (see Figure 4). Then with one more right-click on the mixer, select "Set as Default Device." At this point, the mixer is ready to go as the default recording device for the Sound Recorder program.
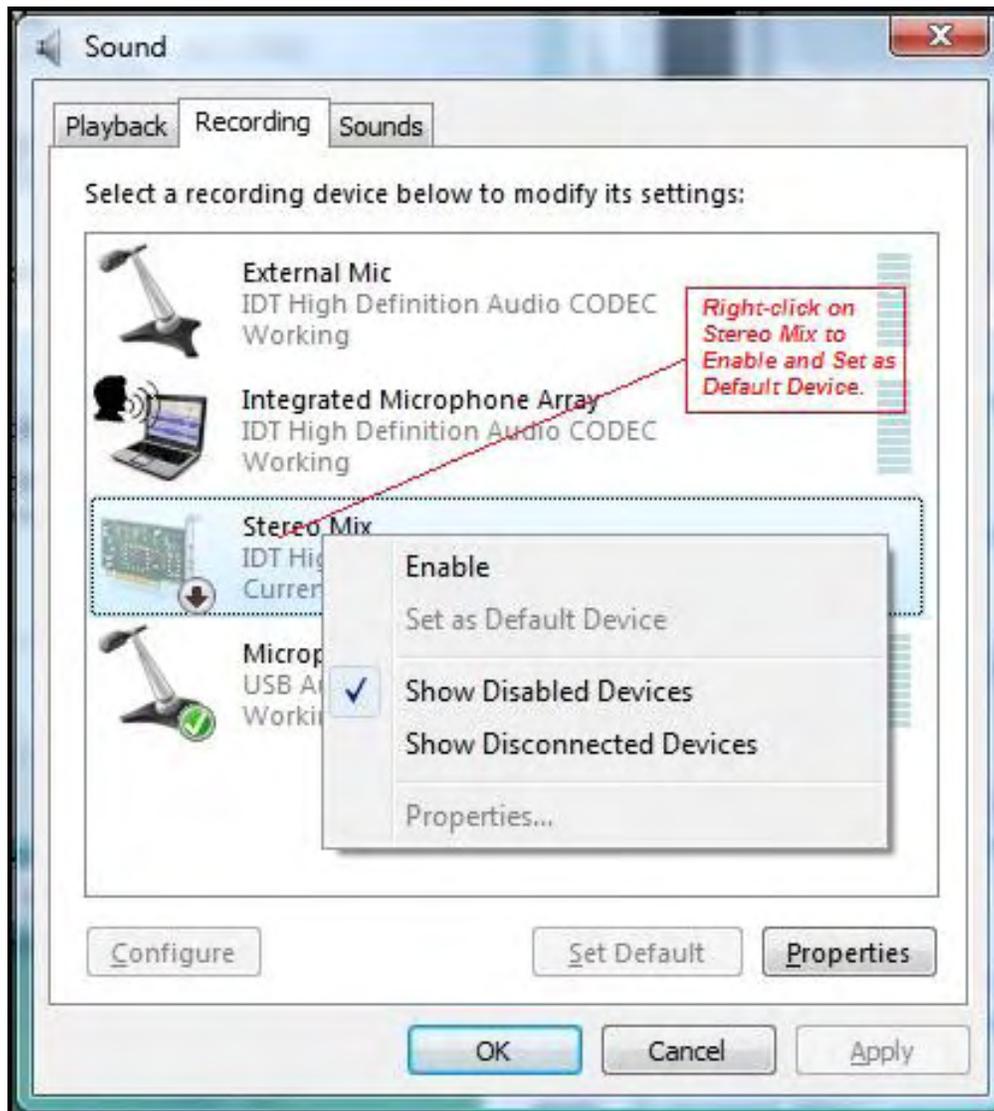
Figure 4. Enable and set the mixer as the default recording device.

If you select Stereo Mix (your mixer could have a different name depending upon the installed card) and click the Properties tab, there are additional settings that may be important in the Properties window (see Figure 5). In particular, the Levels tab will affect the volume at which the Sound Recorder will record. If after you record from your computer, you get no sound on playback (the WMA file can be played with Windows Media Player), it could be due to the level being too low in the mixer's Properties window's Level tab.

Figure 5. The Properties window for the Stereo Mix.

Once you have the mixer set as the default device, start the Sound Recorder, start whatever you want to record, and the audio will be copied into memory until you stop recording. Then you can save it as a WMA file.

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: Buying a Mac

"Buying a Macintosh" by Wally Wang

If you don't want to spend a lot of money, it's easy to avoid getting a Macintosh, but if you're willing to spend more than $1,000 on a computer, it's hard to justify getting a PC. Also, virtualization lets you give your computer a split personality for running multiple operating systems; have your Mac read out loud to you; and a call for volunteers for the Senior Olympics Committee.

The cheapest way to get a Macintosh is to start with a Mac mini, which retails for $599 and up. If you already have a PC, just plug your current keyboard, mouse, and monitor into a Mac mini and you'll be up and running with a Macintosh in no time.

For most people switching from Windows to a Macintosh, the Mac mini represents the simplest and most cost-effective solution. It's also the one model that Apple doesn't promote heavily because they'd rather people paid more for an iMac with its built-in monitor and included keyboard and mouse for $1,199 and up.

If you want a portable Macintosh, you could opt for the $999 MacBook or spend a little more (starting at $1,199) and get the MacBook Pro, which includes a Secure Digital (SD) card reader and a FireWire 800 port.

For frequent travelers who may value light weight and maximum portability, get a MacBook Air for $1,499. This three-pound, thin laptop basically redefined the thin-laptop category. After carrying a MacBook Air around, you'll find it difficult to go back to a normal five-pound laptop again.

Just visit any Apple Store and try these different models out to see which one you like best. Just notice that every Macintosh in an Apple Store is hooked up to the Internet without running any antivirus or anti-spyware programs, despite hundreds of strangers accessing the Internet through them every day.

One sign that the Macintosh is gaining mainstream acceptance is the fact that Staples now has a Macintosh software section. For more evidence that the Macintosh is gaining customers, peek into any coffeehouse and count how many Macintosh laptops you see.

In the past, finding a Macintosh laptop in public was about as rare as spotting the Loch Ness monster. Nowadays, Macintosh laptops often equal or even surpass the number of Windows laptops in many coffee houses at any given time.

At a recent Microsoft invitation-only event (*windowsphonethoughts.com/news/show/95970/mobius-2009-*

fascinating-but-little-that-can-be-shared.html) focusing on Windows Mobile software development, many developers showed up with Macintosh laptops.

Figure 1. Many programmers brought their Macintosh laptops to Microsoft's Mobius 2009 event.

There's a reason why programmers use a Macintosh: Bcause it's the only computer that lets you run Mac OS X and Unix software without any additional software. Buy a copy of Windows XP/Vista/Windows 7 and you can also run Windows on your Macintosh through Apple's free Boot Camp program, which makes the Macintosh the most versatile computer in the world.

Any programmer interested in writing programs for Windows Mobile needs to use Windows. But any mobile phone programmer will probably also want to program the iPhone, so they need to use a Macintosh. That means either getting two computers to write programs for the iPhone and Windows Mobile, or just running Mac OS X and Windows on a single Macintosh.

If cost is really an issue, buy a used Macintosh or just visit Apple's refurbished store where you can buy practically new Macintosh computers for up to 20 percent off. Noted motivational speaker Zig Ziglar once commented that people always have enough money to buy what they really want, regardless of how much money they actually have.

There's a reason why Apple currently has 91 percent of the $1,000-and-up laptop market (*www. businessinsider.com/apple-has-91-share-of-premium-computer-market-research-firm-says-2009-7*). If you don't want to spend a lot of money, it's easy to avoid getting a Macintosh, but if you're willing to spend more than $1,000 on a computer, it's hard to justify getting a PC.

VMware Fusion 3

I've been using both Parallels (*www.parallels.com/*) and VMware's Fusion (*www.vmware.com/products/fusion*), and both programs have always been reliable and stable. Although the differences between the two programs are minor and you can't go wrong with either one, I use Parallels for running Windows 7 and I use Fusion for running Ubuntu Linux.

There's no reason I can't run both operating systems on Parallels and Fusion, but in my own experience, Parallels seems better optimized for Windows XP, Vista and Windows 7, while Fusion seems better optimized for everything else. Running Windows XP, Vista and Windows 7 on Parallels and Fusion showed little difference, but Parallels seems slightly faster.

However, running Ubuntu Linux on both Parallels and Fusion showed that Fusion was far faster and smoother. Under Parallels, there's a minor but noticeable delay when using Ubuntu Linux, but under Fusion, Ubuntu Linux acts as if it's the only operating system running.

Even Windows 2000 seems to run better under Fusion than Parallels. I get the impression that Parallels focused its optimization just for the latest version of Windows, while Fusion focused on optimizing its program for any operating system.

Like Parallels, Fusion seamlessly integrates Windows so you can either view the entire desktop inside a window or make each Windows program appear inside its own Mac OS X window.

Running Ubuntu Linux (or any operating system) under Fusion is also a safe way to surf the Internet. Although there are just a handful of threats to the Macintosh (compared to the thousands of threats for Windows), it's far safer to surf the Internet using a virtual machine running inside Fusion.

In Figure 2, I deliberately visited a Web site that displays a fake virus warning. Notice that this fake warning appears inside a spoofed Windows XP dialog box, yet the entire Web page is running inside Firefox on Ubuntu Linux, which is inside a virtual machine on Mac OS X.
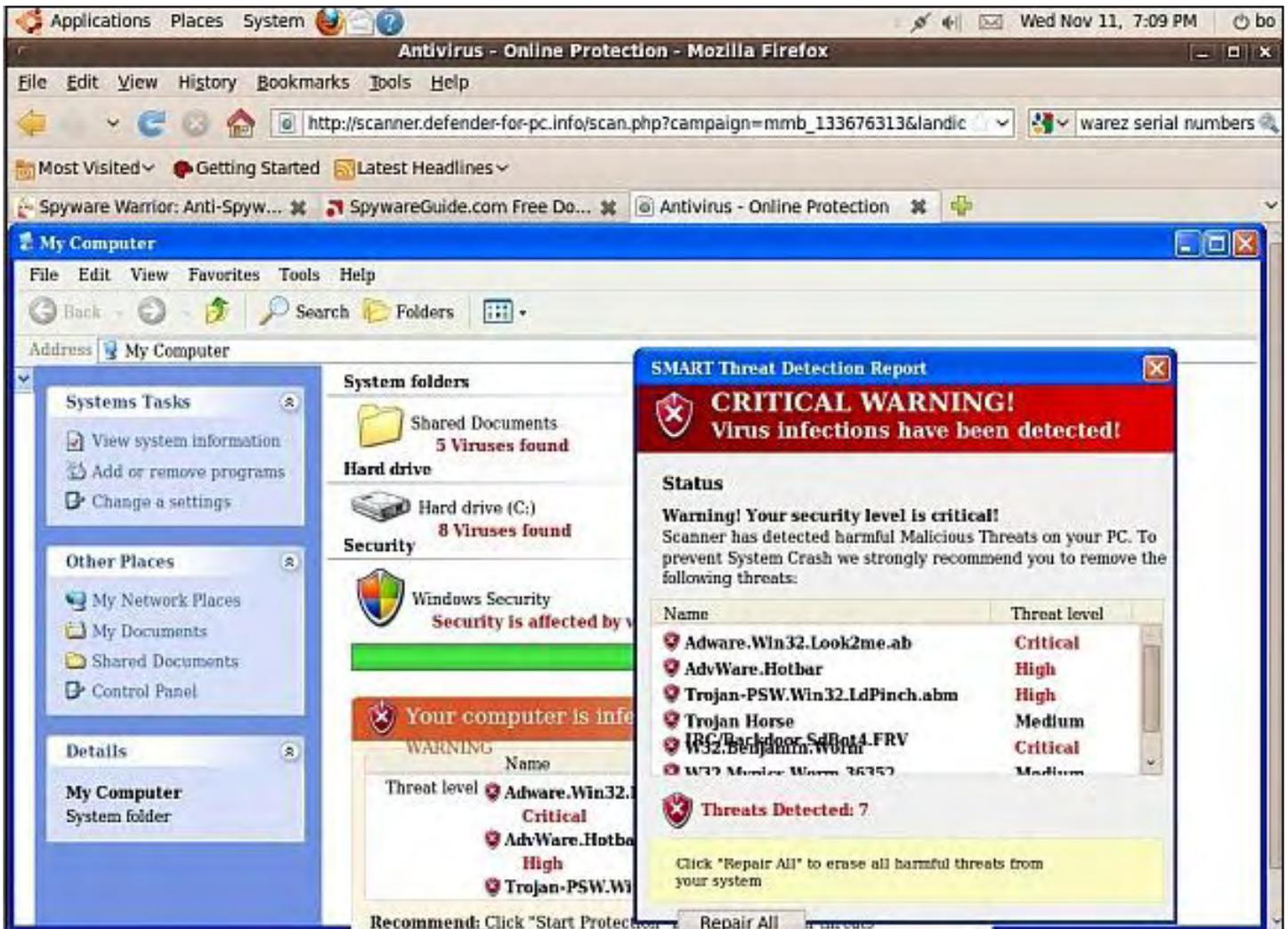
Figure 2. Fusion lets you browse the Web within the safety and isolation of another operating system.

If you still need to run an occasional Windows program, Fusion is easy to use, stable and reliable. Just for running Windows XP, Vista, or Windows 7, you could flip a coin on whether to use Parallels or Fusion, but if you want to run a variety of operating systems besides the latest versions of Windows, Fusion is probably the better choice.

The Poor Man's Virtual Machine

Fusion only costs $79.99, but if you're really on a tight budget, try Sun's free VirtualBox (*www.sun.com/software/products/virtualbox*) program. VirtualBox lets you run other operating systems as a virtual machine, just like Fusion and Parallels.

Figure 3. Running Windows XP through VirtualBox on a Macintosh.

If you want to see what running another operating system in a virtual machine is like, grab a free copy of VirtualBox and load your favorite operating system as a virtual machine on your Macintosh. If you like VirtualBox, then there's no need to buy another virtualization program. But if you find VirtualBox too limiting but still useful, then you might want to move up to Fusion instead.

Then again, you can always download the free 30-day trial version of Fusion and see how your favorite operating system might run as a virtual machine on your Macintosh. Whatever you choose, virtualization lets you give your computer a split personality for running multiple operating systems.

* * *

Browsing the Internet can be fun, but sometimes reading text can get tiring. To rest your eyes while reading any Web page, just highlight the text you want to read and right-click. This will display a pop-up menu.

Run the Apps You Need on the Mac You Love

Using a Mac doesn't mean abandoning your Windows applications and devices. Ditch your PC and safely run your favorite Windows programs alongside Mac applications, and keep using your Windows-only devices on your Mac. Also optimized to offer the bes[t] Windows applications performance without impactin[g] the power of your Mac, VMware Fusion delivers bes[t] class graphics support for Windows, including the la[test] Aero animations in Windows 7 and advanced 3D graphics for avid gamers.

Search in Spotlight
Search with Google

Look Up in Dictionary

Copy

Speech ▶ Start Speaking
Stop Speaking

SO, YOU **FINALLY** [G]OT A [M]AC!

Figure 4. Right-clicking on highlighted text lets your Mac read out loud.

Choose Speech and Start Speaking. Now your Macintosh will read your highlighted text to you in a robotic voice.

*   *   *

If you have data entry, creative writing, or Excel/PowerPoint/Access skills, put your abilities to good use by volunteering with the Senior Olympics Committee. This organization promotes games for the senior crowd to show that you're never too old to have fun.

They'll also cheerfully accept donations. Currently, they need a projector to plug into a laptop for giving presentations. If you'd like to help out in any way, contact Senior Olympics Executive Director, Daniel Propp, at 3268 Rosecrans Street, San Diego, CA 92110, 619-226-1324.

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/*).
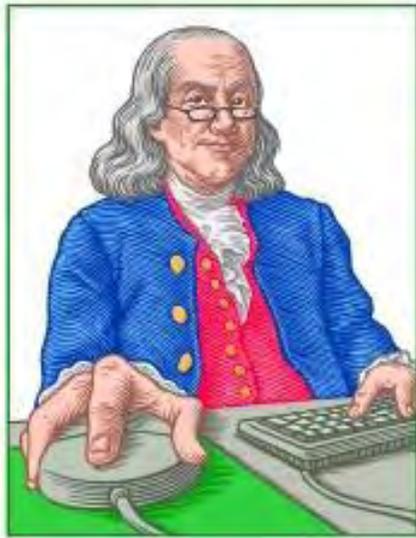
Linux Lessons: Ubuntu Installation

"Ubuntu Installation Step 3: Finishing the Installation" by ComputorEdge Staff

Last week we started the Ubuntu installation and went all the way through disk partitioning. There are now just a few steps remaining to finalize the setup. Also, a reader has run into a problem running Ubuntu 9.10.

Ubuntu 9.10 Problem

I've been using Ubuntu for several years and prefer it to XP. I've been running version 8.04 without problems. Recently I tested 9.10 running from the CD. It gave a message that some generic driver needed replacement with a proprietary driver. I gave permission to install the driver, then 9.10 ran as promised. Having passed the test, I then went back and did a complete reformat and install of 9.10. The install went well up to the point of reboot on completion. This time, instead of giving me an option to install a proprietary driver, it simply locked up, stating that a file was missing with a long series of numbers. "Press any key to continue." I did and got the same message. The computer is now useless since I can't find the old 8.04 disc.

Anyone run into a similar problem? I'm now doing my work on a Windows 7 computer.

Steve

HI, Steve

I am sorry you are having so much difficulty with your installation. It looks like there must have been an update to a driver that is not agreeing with your system. Unfortunately, this can take a lot of troubleshooting to resolve.

I did a quick search on Google Linux (*www.google.com/linux*) and did not find anything specifically that resolves your issue. Also, not knowing your particular system, it is hard to really do a thorough search. You might want to try putting your exact error message in the search and see what results you get. I find sometimes that can be fruitful.

Ubuntu 8.04 is still being offered for download on the Ubuntu download Web site (*www.ubuntulinux.org/getubuntu/download*). You need to click on the "Alternative download options..." to find it.

Another option is to try a different Linux distribution. I have been using Fedora (*fedoraproject.org/*) for years now. It is the free distribution branch off of Red Hat Linux. I have found it to be an excellent OS.

Perhaps I will be able to put together a similar Fedora step-by-step on *ComputorEdge* in the future.

I know this doesn't exactly get your Ubuntu 9.10 running, but these may be some alternatives to giving up altogether.

Good luck

Pete

Ubuntu Installation Step 3: Finishing the Installation

This is the third part in a series by Pete Choppin on installing Ubuntu. The first part covered "Step 1: Getting Ready for Ubuntu"; the second part discussed "Step Two: Partitioning."

Last week we started the Ubuntu installation and went all the way through disk partitioning. There are now just a few steps remaining to finalize the setup.

Picking up from last week where the disk is now partitioned and ready to install the software, we'll go ahead to the next screen in the installation. Once Ubuntu has been set up we will take a look at the basics of the desktop and what some of the features are that you may be interested in using.

Who Are You?

This screen is simply for setting up your personal login account. Additionally, you will name the computer and you then have three login options—log in automatically, require a password to log in, or require a password and decrypt your home folder as well.

A Word About Passwords

The password you create for this account at this point is not critical, but in a real-world environment, this password is what allows someone to log into your account. It should be relatively secure. For now, go ahead and set this to anything you want and don't worry too much about security.

Ready to Install

The next screen shows you a summary of what you have selected as your installation options. Feel free to read through this. There is also an Advanced button on the bottom-right corner of the screen. If you click on this, you will see the following screen:
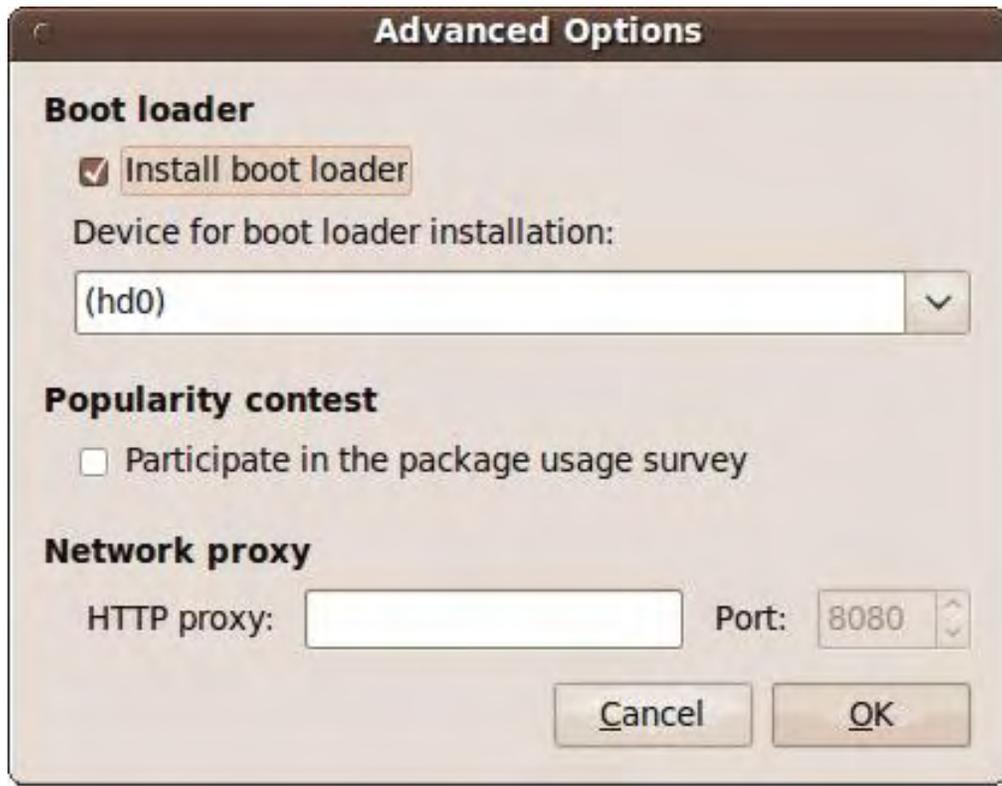
Figure 1. Advanced screen.

There should not have to be any changes made to this screen. The first option has boot-loader options, which allow you to choose how Ubuntu is booted and from which drive the boot-loader instructions may be read. The next option will allow you to participate in a usage survey, which I know nothing about. It likely is used to gauge how many Ubuntu distributions are in use around the world. The last option allows you to specify a proxy firewall if you are behind such a device. Just cancel this if you do not need to make any changes.

At this point you can click the Install button and the installation will immediately begin. The installation is pretty fast. My VMware installation took approximately 18 minutes.

When this completes, you will be prompted to restart. Once you restart you will boot into Ubuntu and will be presented with a login screen. Just log in using the account and password that you set up during the install (at the beginning of this article). Ubuntu will load your account settings and the desktop.
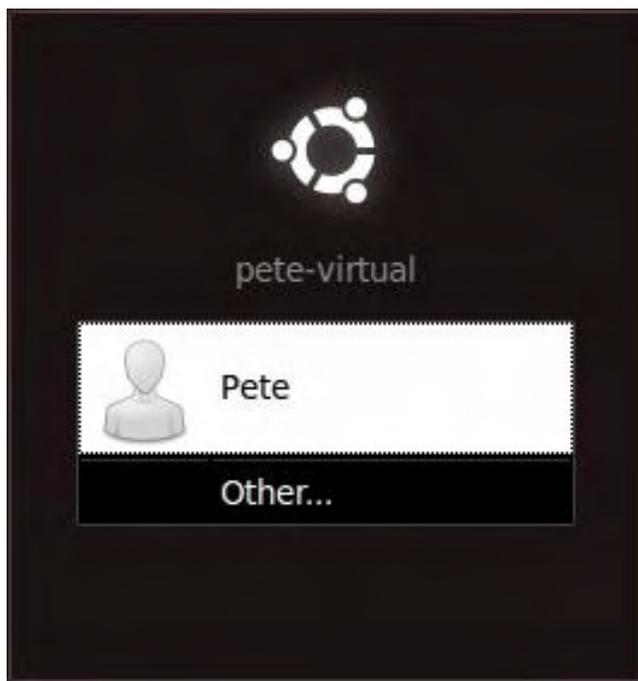
Figure 2. Login screen.

That's it! We've just installed Ubuntu Linux.

Now what do we do with it? Well, let's start by taking a quick tour.

Gnome Desktop Environment

When you have logged into Ubuntu, you are looking at what is referred to as the Gnome Desktop Environment (GDE). This includes the golden-brown wallpaper; the menu bar across the top of the screen; the status bar on the bottom; and all the fonts, colors and the style of the entire desktop. Linux has many desktop environments to choose from, although they are not all installed on every Linux distribution. For now we will just stay with and describe the Gnome desktop.

In case you were wondering, yes you can change the desktop wallpaper, or anything else on the desktop for that matter. Linux is very configurable, and there are usually many choices even in the same desktop environment. We will cover customizing your desktop later, but just know that all of this can be changed to suit your style and preference.

Most of your focus on the desktop will be in the menus across the top of the screen.

Figure 3. Top menu.

Much of this is self explanatory, but there are a few things to note, such as the System menu, which contains many of the preferences for your system. The "Places" menu refers to where in your system you wish to locate files or other items. Another item you will want to become familiar with is the Ubuntu Software Center located in the Applications menu. This is where you can go to find more applications and utilities to install.

Down on the bottom bar there is not a lot to note. I suppose it is similar to the old Mac desktop in that regard. There is one very interesting feature to check out, however. There are two squares in the bottom right next to the recycle bin. This is called the Workspace Switcher.

Figure 4. Workspace Switcher.

This gives you multiple desktops to work from, each square representing a separate workspace. By default, this is configured with two workspaces, but if you right-click the workspaces and go to Preferences, you can add more. This is a great feature because, in effect, you are expanding your workspace to be able to have much more work area available than what you see on one screen. Try this out. It is one of the features of Linux that I really like.

The last menu item I will go over this week is the system logout and shutdown menu. This is located in the far right in the top menu. Click on this and select Shut Down to turn off your system.

Figure 5. System logout and shutdown menu.

That's all for this week. Next week, we will take a look at some more advanced features of Ubuntu Linux.

If there are any specific areas you would like to address, please submit these and I will put special emphasis on them.

Pete Choppin, My Bio (*webserver.computoredge.com/editorial/prg/authorbio.mvc?contribid=CHOP*)

<p style="text-align:center">*   *   *</p>

Give Us Your Linux Tips and/or Questions

If you have an opinion on these or other Linux topics, then please let us know. Also, if you have another

*Linux tip that works for you, or a favorite Linux software application, and would like to pass it along (or have a question), please drop us a line at Linux Lessons (*ceeditor@computoredge.com*).*

This is a column for Linux and Unix-like operating system users. The goal is to give Linux users an opportunity to share tips, tricks and ideas with both fellow users and the *ComputorEdge* Linux newbies. Each week in this column, we will highlight the thoughts you submit to us. This is your column. As long as a submission is dealing with the Linux/Unix-like world, we want to share it.

The tips and tricks may be short or long, and can include graphics. If there is a little technique or program that you use on a regular basis, then we want to hear about it. You may also pose questions for other Linux users to answer. E-mail your ideas or questions to Linux Lessons (*ceeditor@computoredge.com*). Be sure to put the words "Linux Lessons" in the subject line so it won't get lost in junk mail. We depend upon you to make this column a success.

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.*

Rob, The ComputorTutor Does VB.Net 2010: VB Wrap-up

"Wrapping Up Visual Basic" by Rob Spahitz

Last week we looked at creating custom graphics inside custom components. Now let's start wrapping things up with our VB work.

Last week we looked at creating custom graphics inside custom components. Now let's start wrapping things up with our VB work.

Note: These columns are written using VB.Net 2010. However, most of the features will work just fine with VB.Net 2008 or even earlier versions. To see how to install VB.Net 2010, check my July 31, 2009 column, and to retrieve project files, check my server at *www.dogopoly.com/ce*.

Responses:

Recently, this message came in from Roger of Poway:

Warning for Simple Table Creation

[Regarding the October 23 Rob, The ComputorTutor Does VB.Net 2010 column:]

As a long-time Oracle DBA, let me just pass along a warning about using the techniques shown in simple examples in "real" code. There have been numerous discussions in the database design world about using ID (autonumber in Access) fields in tables.

Since an autonumber guarantees a unique primary key (PK) each time, there is a possibility of creating duplicate Person records. If my code doesn't check for duplicate entries, I could add duplicate records for Jane Doe a zillion times—and all zillion records will appear in the database. Sometimes, it is legitimate to have more than one person named Jane Doe. Other times it is a mistake created by an end user who clicked the Add button too many times.

With just the first/last name as the only columns in the table, it would be virtually impossible for anyone to determine whether the database contains duplicate records or multiple people with the same name. In the real world, developers should always provide enough fields in a table for someone to detect the duplicates or same names.

I realize your example is just to teach a principle, but developers need to be aware of the repercussions of extrapolating the simple example into a full-fledged database app. As a DBA, I cannot tell you how many times I have been asked to delete duplicate records from a database because the ID field allowed someone to add those duplicates. It's up to the developer to ask the user when they click Add if some of the fields (other than the ID) match other records.

Just mentioning this as a caution you might include in your discussion.

-Roger Crowley, Poway, CA

Thanks, Roger,

You're very right about watching out for potentially duplicate records. I think I actually discussed this in my Access articles about six months ago. However, your message looks like you place the responsibility on the software developer. In my opinion, this is the joint responsibility of the database designer (maybe this was your intent) and the programmer. The risk of the AutoNumber field is exactly what you describe. People who create DB tables with multipart keys typically avoid these problems but introduce others (difficulty in changing key values without breaking the data integrity). The solution is to use the AutoNumber, and then apply a Unique Constraint to the combination of fields that should never be duplicated.

For example, if you think that no two people in a name database have the same first name, last name and phone number, then you could apply the Unique Constraint to these three fields (which is better than making those three fields the primary key). When you apply a Unique Constraint, you are creating an Alternate (Candidate) Key so it should fit all the criteria of a Primary Key.

Beyond this, sometimes the problem cannot be solved by the database. In the case shown, the table contains only the person's First and Last Name. Obviously, you could know more than one person with the same first and last name. Since the table has no other fields to make the record unique, you have the risk of duplicate records that do not represent different people. In cases like this, I'd suggest reconsidering your database design. Often this can be solved with a new field to force uniqueness. If that's not practical, then it's the programmer's job to reduce the risk of unexpected duplicates. The best way is to have a code that searches for an existing record with that information and warn the data-entry person that this appears to be a duplicate. The record should *not* be thrown away since it could be valid; but the warning should definitely appear to reduce the unnecessary clean-up jobs needed by the DBA to identify and remove these duplicates.

Also, one simple test for the developer is to ensure that the Add button is not clicked twice in succession (possibly by not adding records unless the data is "dirty," meaning that something was changed in between).

Thanks again, Roger!

Multiple Projects

Sometimes in VB, you want to better organize the pieces of a project. The idea of Object-Oriented (OO) programming is that you should avoid reinventing the wheel. If you've already coded something, why recode it? Taking that one step further, why even copy-paste it? A better approach to reusability is to create a collection of components that handle a specific task, then pull the pieces together as needed. We do that all the time when creating forms: We take items out of the toolbox and add them to the form. Each toolbox item is a separate component ready for reuse. However, these reusable items do not have to be graphical in nature; they could also be just blocks of code that perform a task (such as calculating some statistics or pushing information to a database).

To better handle these tasks, VB offers many options for organizing your code. The most obvious is

Subroutines. Each VB Sub can perform a specific task and can receive parameters to perform the task in different ways. Or it can pull information from class-level variables or other external sources like a database. Also, if you use a Function instead of a Sub, you can do the same thing and then return a value for another procedure to examine.

In addition to Subroutines, within a project you can create a collection of Classes (modules) to organize code. Each class can contain a collection of subroutines, functions, properties, events, class-level variables, enumerations, etc. If all that's not enough, you can create a collection of classes within different projects and solutions and use them interchangeably if they are set up correctly.

The nice thing about different projects is that they can be set up in different ways. So far, the only type of project we've created is the Windows Form Application. That's great for making forms (although you don't need to use the forms). However, if you want to create a "dll" (Dynamic Linked Library), which is a file commonly used in Windows to make a collection of procedures available to a program, then you'll need to make a different VB project. Similarly, you may want to make a collection of custom controls and put them into a single project for use by other projects.

Let's see how to handle this. We'll make a project with two custom controls, and then use it in another project.

Open VB.Net and create a new Windows Forms Control Library. Note that in VB.Net 2008, the current release, this option may not be available. In that case, just create a Class Library and we'll make it work the same. Now call the project "MyLibrary."

If you had to create a Class Library, you'll be presented with a simple empty class: Public Class Class1. Add a UserControl from menu Project/Add User Control, then Add UserControl1.vb (which should be the default item). Now we're ready to go, and any version of VB.Net should be ready to go.

Let's turn the User Control into gaming dice. If we add two to a project, we'll have a nice pair of dice for a typical game or add five for a Yahtzee game. We could handle some fancy graphics to make the control look more like dice, possibly with a 3-D effect, but I'll keep it simple. Add a Label to the top-left corner of the control (Location 0,0), and then set its Font Size to 24 and its Text to 6. Since this should now have a size of 35,37, set the UserControl to match that size. Now, in the Solution Explorer window above the properties (or view Solution Explorer as needed), change the name to MyDice.vb so that the name of this control makes more sense.

Now on to the code. Let's add a simple property to show the current value and a method to allow the dice to change values. Menu View/Code should get you to the right place to start coding. Add the property DieValue, type Integer, any way you can such as the way we've done in a previous article by right-clicking and using menu Insert Snippet/Code Patterns (double-click), and then Properties, Procedure, Events and then Define a Property. Make the code look like this (including the user-control structure that was set up for us and a new line I added):

```
Public Class MyDice
    Private miDieValue As Integer = 6
    Public Property DieValue() As Integer
        Get
            Return miDieValue
        End Get
```

```
        Set(ByVal value As Integer)
            miDieValue = value
                Me.Label1.Text = value   ' <= Add this line
        End Set
    End Property
End Class
```

Now add the procedure the change the DieValue when activated:

```
    Public Sub RollDice()
        DieValue = Int(Rnd() * 6) + 1
    End Sub
```

Make sure that the Property and Sub are set to Public to ensure that other projects have access to them. However, the variable used to hold the current value can be private since the Property will make that value available as needed.

One part done. Let's work on the next Control. How about we make a game token? We can add a property to change the color.

Add a new UserControl (as indicated above), but this time give it a name, MyToken, so we don't have to rename it later. Again, for simplicity, we'll just make a basic shape: an oval (100x100) sitting above a rectangle (149x49), similar to Figure 1.
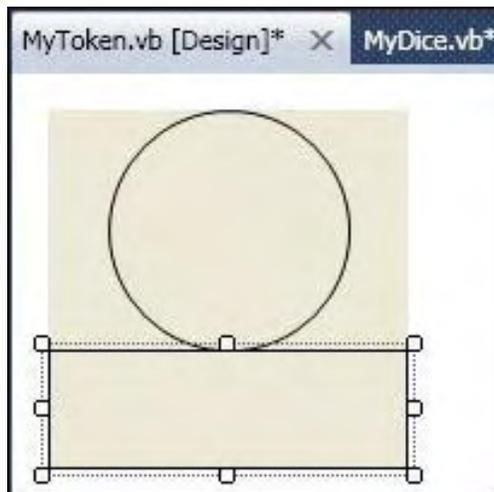

Figure 1. User Control with Shapes.

Starting with VB.Net 2008, these are available in the Visual Basic PowerPacks Toolbox. If you're using VB.Net 2005 or earlier, you may want to upgrade or simply apply the shapes in the Paint event as we did in a recent article. Make sure to change the BackStyle property to Opaque so that the fill-color can be changed.

Add the TokenColor property as below and then we'll make these work with another project.

```
Public Class MyToken
     Public Property TokenColor() As System.Drawing.Color
          Get
               Return Me.OvalShape1.BackColor
          End Get
          Set(ByVal value As System.Drawing.Color)
               Me.OvalShape1.BackColor = value
               Me.RectangleShape1.BackColor = value
          End Set
     End Property
End Class
```

Note that the System.Drawing reference may be optional depending on the Library references included in your project. Also, the names of the Oval and Rectangle may have different names, so just match the names in your own project.

Now, with these Controls in the project, Save All (using default names) then Build it (menu Build/Build My Library). If you coded everything correctly, you should be able to find a file named "MyLibrary. dll" (along with some others) somewhere in one of the project's subfolders.

We'd like to have a form to test these controls, so Add a Windows Form to the project, called Tester. When the form loads, you should be able to locate the controls in your toolbox and add them to the form, as seen in Figure 2.
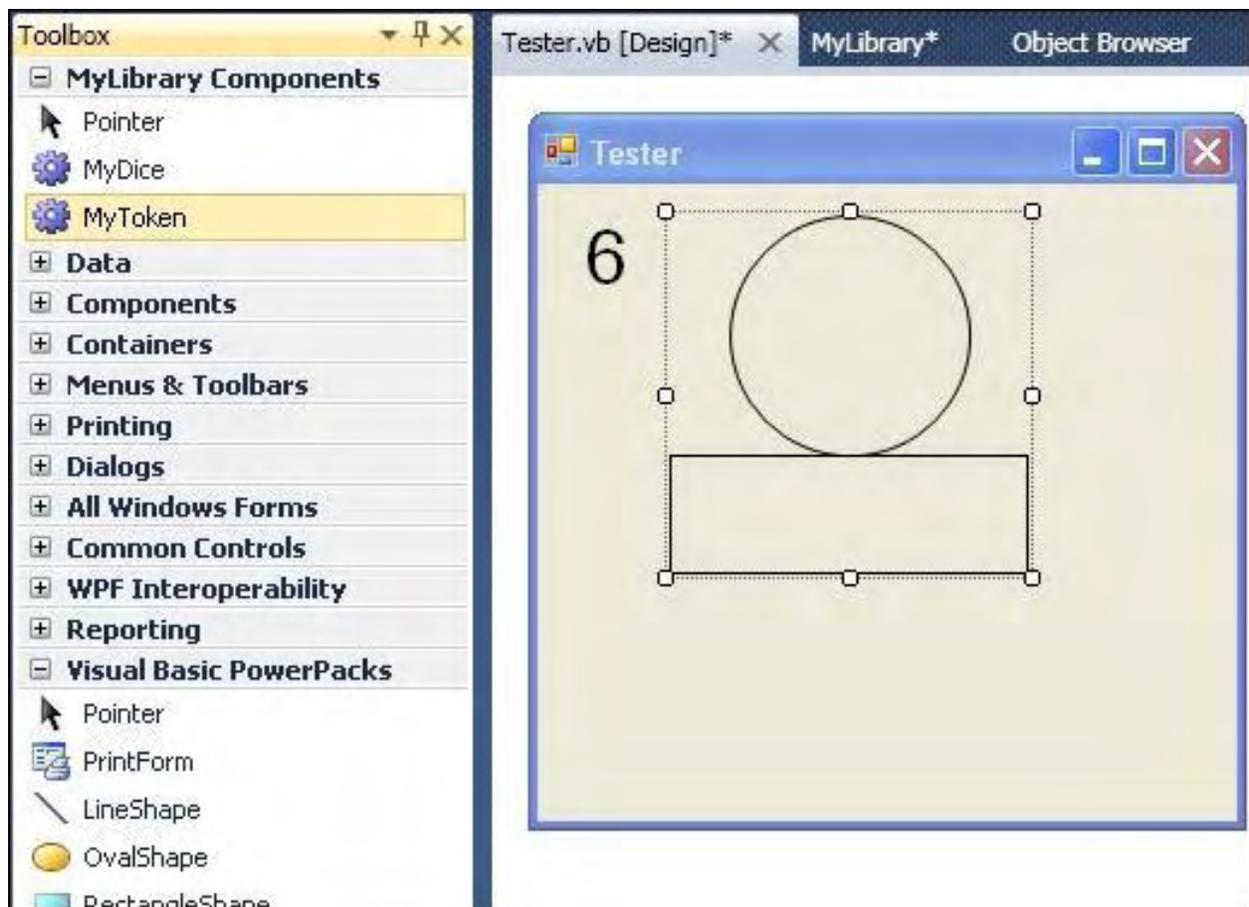

Figure 2. Test Form with User Controls.

That's great for the same project. Let's use the controls in a new project. As long as the MyLibrary project is built, it doesn't need to remain open. However, if you find that you want to make updates, you can have that project open while you work on the second one.

Add a new project (menu File/Add/New Project). Do not use File/New Project or it will close the existing project. Add a new Windows Forms Application named MyNewGame. Within the Solution window, you'll see both projects, as seen in Figure 3.
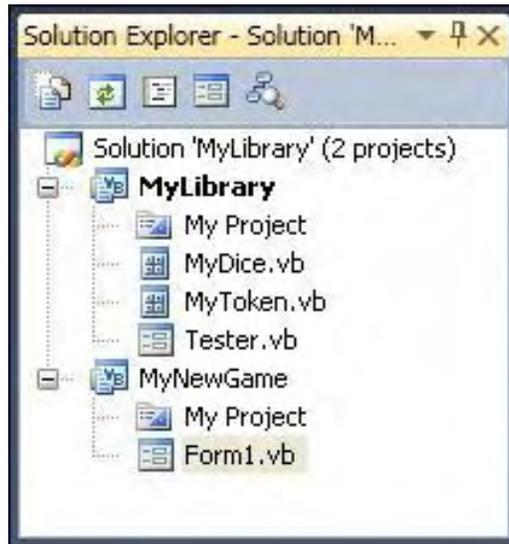

Figure 3. Two Simultaneous Development Projects.

By keeping both projects open together, you gain access to any of the public parts of MyLibrary while working within MyNewGame. That means that the controls we just created are immediately available in the Toolbox. Drag the pieces and drop them onto the new project's form and play with the properties we added. You should be able to get results such as those seen in Figure 4.
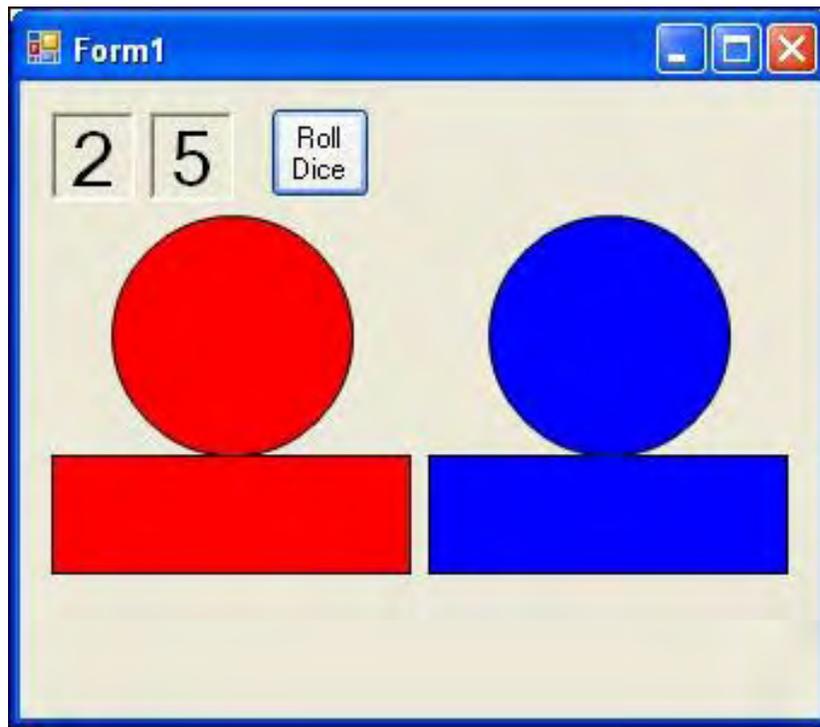
Figure 4. New Project with Controls from First Project.

To make this work, you'll need to update the Solution so that it uses this new project. We created the MyLibrary project first, so that's the default Project for the Solution. To change it to the new project, right-click on the new project (MyNewGame) and select Set as StartUp Project. Now when you run the solution, this new project runs. And if you coded the Roll Dice button as seen below, the values of the dice should change.

```
Private Sub btnRollDice_Click(ByVal sender As System.Object, _
      ByVal e As System.EventArgs) Handles btnRollDice.Click
   Me.MyDice1.RollDice()
   Me.MyDice2.RollDice()
End Sub
```

Now that you've got the hang of it, let's close (and save) the projects and create one without the controls. Open a new Windows Forms Application called AnotherNewGame. A form appears as expected. However, the controls are not available. To see and use them, they must be included with the references. Right-click on the All Windows Forms Toolbox and select Choose Items. This will present a window with several tabs. It allows you to add a control library from any .Net Framework Components project registered in Windows, "COM components (traditional Windows dll's and files), and other options. From the .Net tab, select Browse and locate the MyLibrary dll we created earlier and click the OK button to add it to your reference list, as seen in Figure 5.
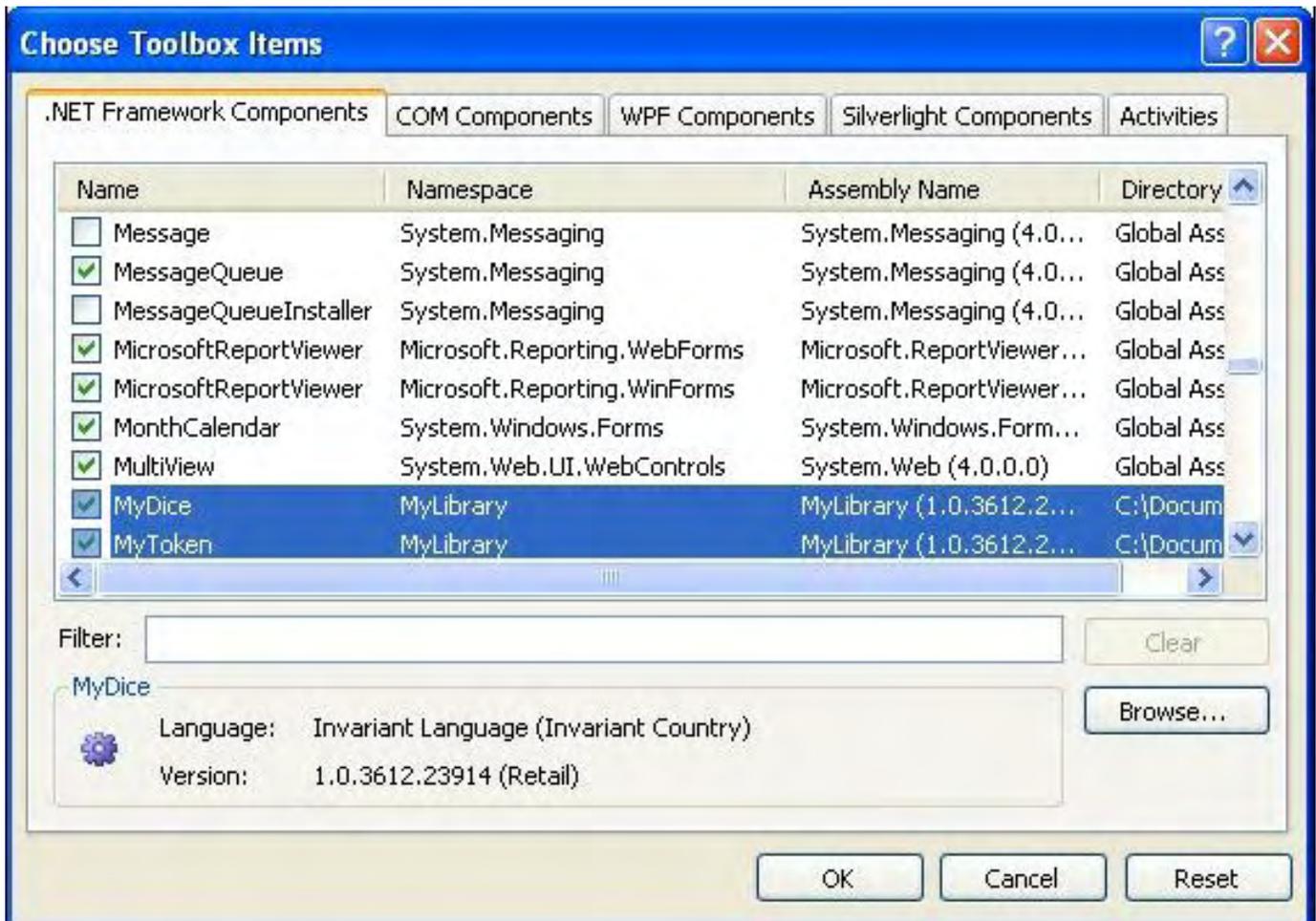
Figure 5. Adding a New Reference.

Click the OK button to add it to your Toolbox and use as needed.

And just to show some of the possibilities, Figure 6 portrays a custom game I'm working on to add more value to my Dogopoly.com game. Stay tuned for that one.
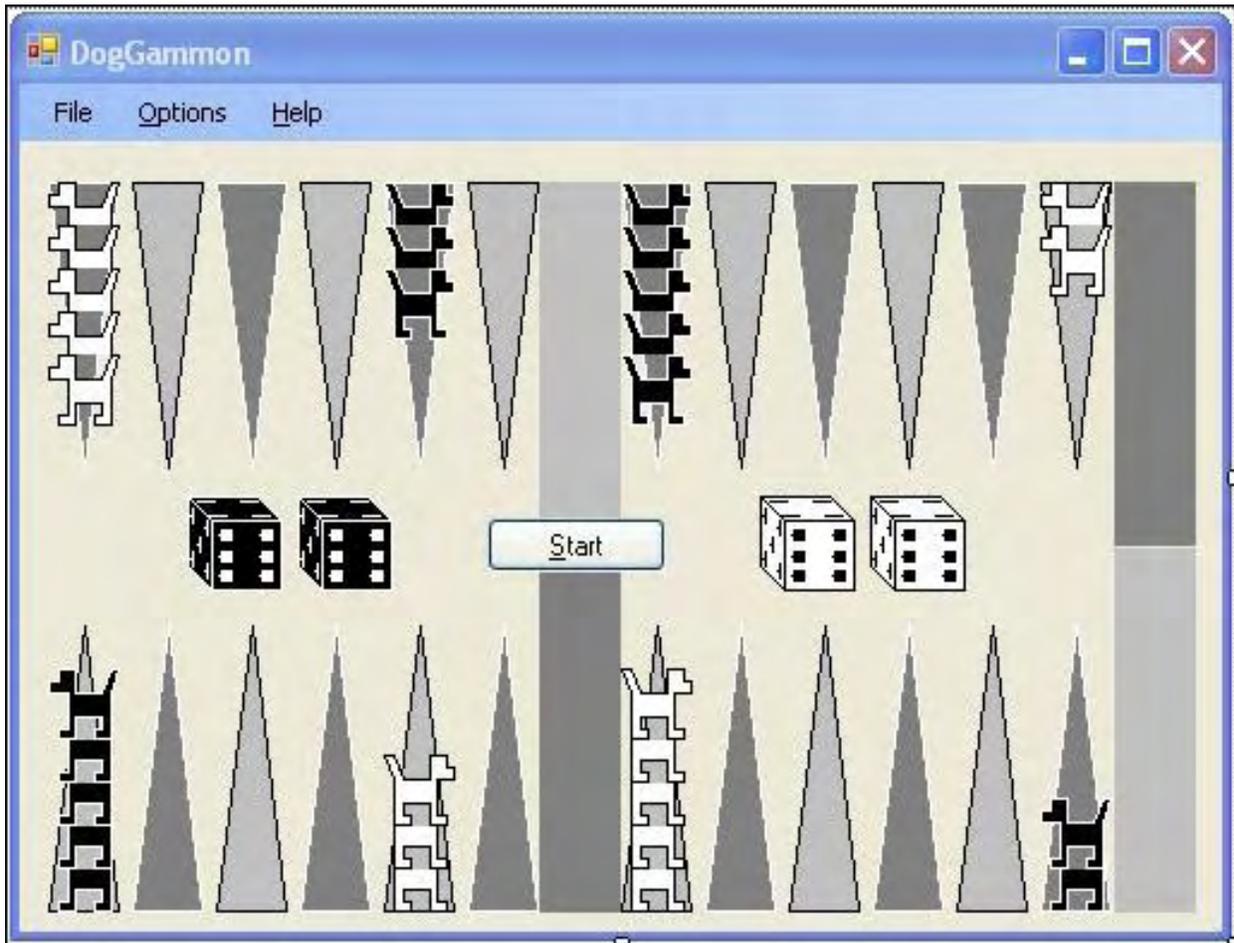
Figure 6. DogGammon Game with Custom Controls.

At this point, we've gone over many of the best features of VB.Net. After the holidays, I'll start up a new set of articles that help solve computer problems. Meanwhile, feel free to send comments and suggestions.

Rob has been in the computer industry for over 25 years and is currently a part-time teacher, offering classes in Excel, Access, Visual Basic, and a variety of other technical tools. He has loved *ComputorEdge* since 1990 and can be contacted at *RSpahitz@Dogopoly.com*.

Looking for a great boardgame? Grab a copy from DOGOPOLY.com (*dogopoly.com*) and have a dog-gone great time.

Spam of the Week: Your Photo Is on the Web

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

> When someone tells you there is a picture of you posted on the Web, who doesn't want to look? Of course, when it comes from a stranger, we should be suspicious.

When someone tells you there is a picture of you posted on the Web, who doesn't want to look? Of course, when it comes from a stranger, we should be suspicious.

This week the contest was between a phony Social Security Administration spam (see Figure 1):
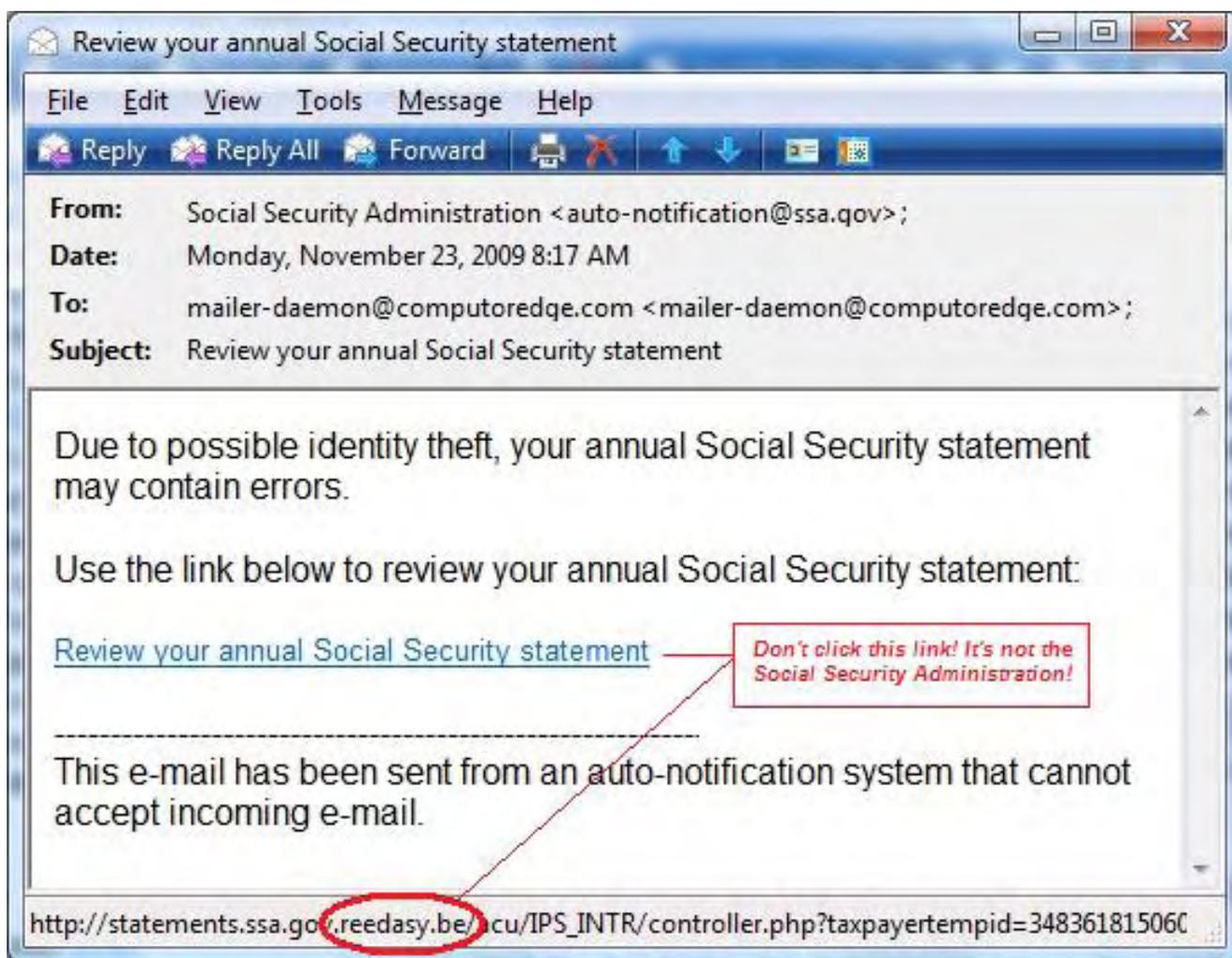
Figure 1. The "Social Security Administration" scam.

and the tempting e-mail about terrible photos being posted on the Web (see Figure 2):
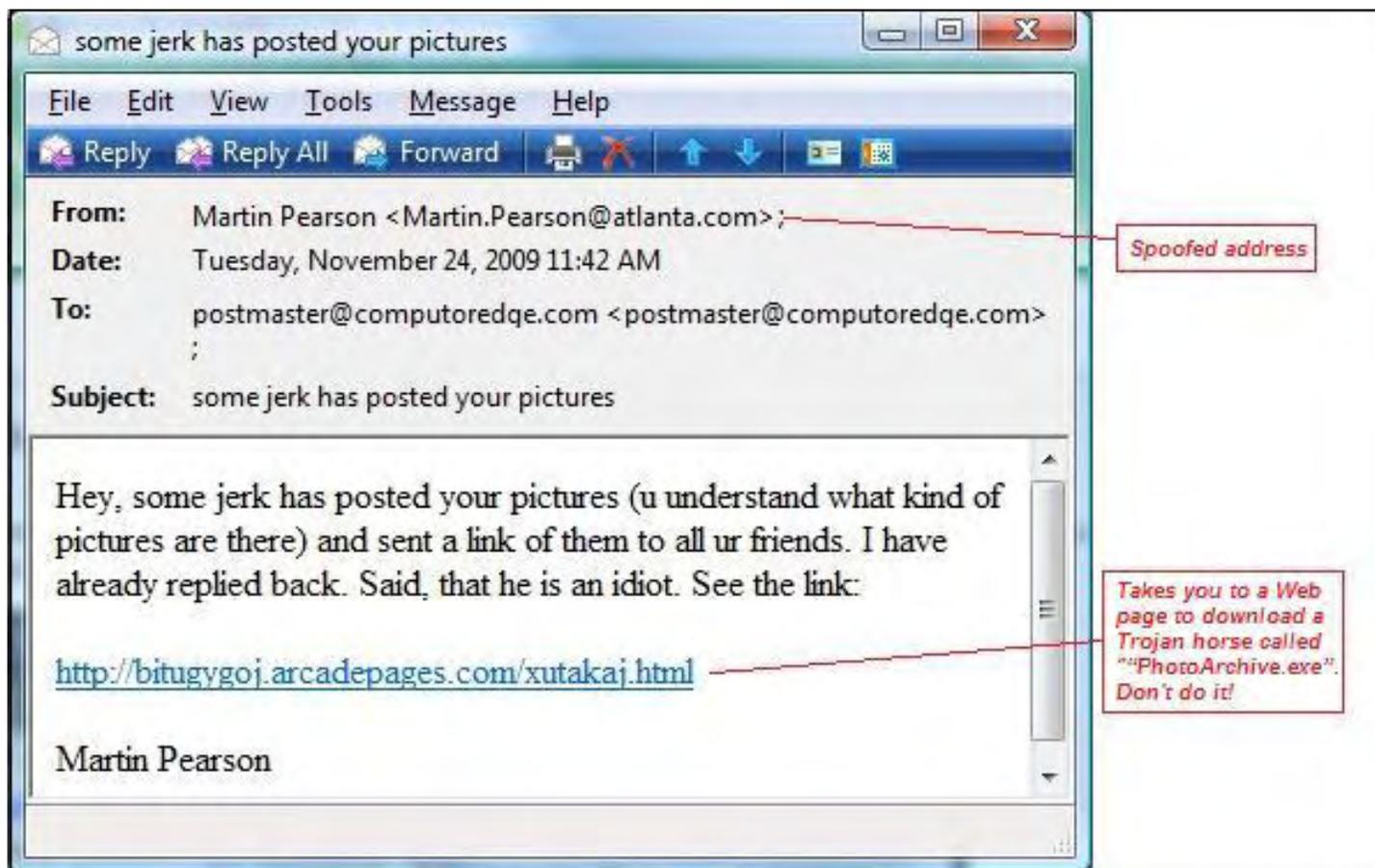

Figure 2. The "some jerk has posted your pictures" scam.

This scheme is the Zbot malware disguised as an e-mail from a friend—although you most likely don't know the person in the address. The e-mail is actually coming from a server in Brazil ("brasiltelecom.net. br" is the URL). The link will direct you to a page for downloading "PhotoArchive.exe" Trojan, which is looking for passwords. If you run the program, it will copy itself to the system folder with "sdra64.exe" as its name. Just don't go there! Delete the e-mail!

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: How Much Computer Memory?

"A Minimum-Memory Recommendation" by Jack Dunning

> You don't know what you will be doing with your computer in the future, so you should always get the optimal amount of memory for almost any possible use.

One recommendation usually made to new computer buyers is get as much memory as you can afford. I concur with that approach and would add that there are also minimum amounts of memory that you should buy—regardless of how you plan to use your computer.

The first reason for the minimum memory recommendation is that today's software is much more demanding than earlier programs. Sometimes it is due to bloat caused by sloppy programming; other times it's because there are so many more features in newer versions of applications.

The second reason for loading up your machine with memory is that you may not have a clue how you will be using your computer even a year from now. Some people go into the computer-buying process with the idea that they may do some Web browsing, e-mail and a little word processing—a few applications that don't usually place heavy demands on a computer. However, things do come up.

For example, your first grandchild (or niece or nephew) may be born (through no fault of your own). If that grandchild lives out of

Alex has bought so many different computers that he can't decide which one to use.

state, then you will want to use a free video-call service such as Skype (*www.skype.com*) to stay connected with him or her. This is one of the few ways that you can actually see a child grow and change from a long distance. It is no substitute for the real thing, but it is certainly better and more satisfying than the phone calls and the occasional photo.

While this type of video hookup can be done on almost any computer, processor speed and tons of memory are the keys to a quality picture with no hesitation. (The speed of the Internet connection is also important.) If both computers in the connection have plenty of power and memory, it's even better.

Next, maybe you've discovered that your digital camera will also make decent videos. Even though you never planned it, you might be in the business of making videos to post on YouTube—if just for family and friends. Lots of memory is a great help in editing videos. While it's usually easy to upgrade your computer memory, it's better if the memory is already there. The point is that you don't know what you will be doing with your computer in the future, so you should get the optimal amount now for almost any possible use.

In today's computers, I consider 4 gigabytes the optimal amount of memory for a new computer. It's not that the operating systems and software require that much, but most will perform much better at that level than with something less. If you're getting a 32-bit operating system, then 4 gigs will be the max that you can use. (In Windows you will have something less than 4 gigs available in a 32-bit machine.) If you're getting a 64-bit computer, then the 4-gig limit is blown away and you may want to opt for more. However, it should be noted that, for now, most of the software will be 32-bit programs that won't take advantage of 64-bit processing. Over time, there will be many more 64-bit software programs that will take better advantage of both the CPU and the extra memory.

I've noticed that most of the laptop computers I've seen recently are using 64-bit Windows. One of the reasons that they come with only 4 gigs is because the price of adding another 4 gigs can be comparatively expensive—plus in most cases, you won't need it. For example, laptops may have only two slots for memory modules. With 4 gigs installed, each slot will hold a 2-gig module. Installing four additional gigabytes (two 4-gig memory modules) requires the removal of the 2-gig modules and replacing them with

4-gig modules. Although the price continues to come down, this can add substantially to the cost.

If you think that you're going to use memory from your old computer to expand your new computer, there is the issue of memory compatibility. Many of the new computers (motherboards) require the newer DDR3 memory. Your older computer likely has DDR2 memory, which is not compatible (won't fit in the slot and wouldn't work if it did) with DDR3 memory. I would not stay away from a computer that uses DDR3 memory for the sake of compatibility because the DDR3 memory has much greater capabilities and future capacity. It's the memory of the future.

Since the price of memory drops over time, it's difficult to say that it's cheaper to install the expanded memory when buying a new computer than adding it later. That's why it may be best to get the optimal four gigs for now. You can always expand later when that other demanding killer app enters the scene.

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

"Wi-Fi at Airports," "Digital Dave and Microsoft Security Essentials," "Linux Coverage," "Windows 7 Article," "Thanks, Jack!," "XP Pro to Win7"

Wi-Fi at Airports

[Regarding Dawn Clement's October 16 article, "Finding Free Public Wi-Fi":]

I believe that I sent a note six or nine months ago about the Wi-Fi network available at Denver International Airport. I am a frequent Denver-based traveler and have found frustration in using the Wi-Fi to send e-mail. As your article pointed out, this is common, something I have not experienced at other free airport Wi-Fi systems. Upon inquiry to DIA management, I finally found out the Outlook default ports are blocked. Apparently other ports are not—this is where my technical understanding fails me. I had asked DIA management to at least post a notice so that users are not at a loss as to why they cannot send e-mail. (I have asked other travelers that seemed to be having a problem, and they were glad to hear it was not their machine's problem.)

I have found that the typical response from DIA customer service is "Contact our Wi-Fi vendor at 800 ...." That's real customer service!

I am real close to escalating this matter to the city management level, although the airport is a separate agency.

I would like to see an "investigative" article on this issue. What do you think?

-Michael J Foley, Denver, Colorado

Digital Dave and Microsoft Security Essentials

[Regarding the November 13 Digital Dave column:]

Your recent recommendation of Microsoft Security Essentials was to comment on its rave reviews. You might want to read the PC mag review of the product (*www.pcmag.com/article2/0,2817,2353386,00.asp*); they had serious reservations about its effectiveness.

-Ed, Modesto, CA

Checking out the link provided by Ed in Modesto about Microsoft Security Essentials, that article suggests the program is relatively weak and needs to be run in addition to at least one other antivirus program. However, after downloading MSE and starting to install it, that program very strongly suggests uninstalling *all* other anti-malware programs first to avoid instability and other substantial problems. At this point, I run SuperAntispyware, Avast!, and MalwareBytes, and it seems most unwise to substitute

MSE for *all* of them.

Great articles most of the time, DD.

-Steve Johnson, Camp Verde, AZ

*Most of the feedback I have on Microsoft Security Essentials was word of mouth via individuals in e-mails or on message boards. I just did a quick search for other reviews and found numerous complimentary, if not glowing, reviews such as Ars Technica (*arstechnica.com/microsoft/news/2009/09/first-look-microsoft-security-essentials-impresses.ars*), Bright Hub (*www.brighthub.com/computing/smb-security/reviews/39342.aspx*) and PC Advisor (*www.pcadvisor.co.uk/reviews/index.cfm?reviewid=117961*). These are just a few examples—there were many more. While I don't dispute the cited review, I think it's necessary to get opinions from multiple sources. Most people are applauding the performance and unobtrusiveness of MSE. Detection rates seem fine to me. Nothing catches everything. I guess "rave reviews" might be overstating it, but the people I talked to were excited.*

MSE is for people who want to keep their antivirus solution simple and free. These days, it seems like you usually have to do something to get infected. People either install something they shouldn't or they go to the wrong Web site. If you install pretty much any AV program and engage in safe computing practices, you'll be OK. MSE has a small system footprint, a good false-positive record, and it doesn't try to sell you anything. If I'm choosing just one AV program, right now this is the one I choose.

You can obviously run multiple overlapping programs and get better results. I don't think this is saying much and I don't think this is a good solution for the average computer user. Most AV programs recommend turning off all other AV programs. There are many applications that recommend turning off AV. This is because, by design, AV software sticks its nose into what other programs are doing which can cause instability. That's all the warning means.

I sure don't want to be telling people to use three different programs and then expect them to keep them updated and running properly. The average user isn't paranoid enough to go to the trouble. There is still a huge number of users that have no antivirus software installed at all. Plus, people continue giving out their passwords and credit card numbers everywhere, while installing everything any Web site asks them to. Most of the computer virus problem is user error.

Finally there is now an easy answer when a non-computer-savvy person with Windows asks what to do about AV. Even AVG was getting annoying because of its paid version. Invariably, people would find only the paid version and come back to me saying "Hey, I thought this was supposed to be free!" MSE has a lot of promise as an easy answer.

-Digital Dave

Linux Coverage

[Regarding the November 6 Linux Lessons: Tips and Tricks from Users column:]

I love your Linux coverage, whatever percentage I can use.

-Cicero, Colorado Springs, CO

Thanks, Jack!

[Regarding the November 6 Windows Tips and Tricks: Resizing Windows Without a Mouse column:]

I've been wondering what the purpose of the move-and-size menu was. Even when I need it on my low-res pocket Vista computer or on my old Win98 laptop in safe mode, I didn't know how to use it. You're a genius who knows what and how to communicate.

-Ron Cerrato, San Diego

Windows 7 Article

[Regarding the October 30 Windows Tips and Tricks: Give Windows Live Mail a Try column:]

A most informative writeup. I'm considering upgrading to Windows 7 at the time I need to replace my PC. Wouldn't replacing a few failing components at the time of the move to Win 7 be a more economical choice than ordering a new, off-the-shelf PC?

-Francis McGuire, San Diego, CA

In my humble opinion, it would depend upon how old your computer is. If it is only one or two years old, you might be right. But so much changes in the processor and motherboard technology, that a new computer will blow away an older computer, not because of Windows 7, but because of the hardware.

Jack Dunning

XP Pro to Win7

[Regarding the October 16 Windows Tips and Tricks: Windows 7 Versus Windows XP column:]

I echo the comments by Jack. I am an 81-year-old computer user that had no trouble installing Win 7 Home Premium 64-bit on my new computer. Transferred all my data files and reinstalled programs with one exception—I have an old program I have used since 1986, and it would not install. It seems the 64-bit version of Win 7 will not handle 16-bit programs! I then went to Sun Microsystems and installed their free-for-personal-use VirtualBox and reinstalled my old XP SP3 into the virtual machine I created where I can now run my old program. In summary, I am seamlessly running a 64-bit operating system with a window running a 32-bit operating system running a 16-bit program. If someone wanted to use Linux or an old DOS program, they could create virtual machines and run those systems under Win 7. Marvelous technology!!

-Ray Gill, San Diego, CA

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