ComputorEdge™ Online — 05/29/09

This issue:
The Best Free Antivirus Software

An overview of the best software available for protecting your computer—and it's free!

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Viruses and the Mac

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[Little Linux Lessons: Tips and Tricks from Users](#) by ComputorEdge Staff

Linux users share ideas and ask for help.

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[EdgeWord: Computer Hygiene](#) by Jack Dunning

Good habits to help you avoid disaster.

As with any virus, good hygiene will help prevent the vast majority of those diseases circulating from infesting your computer.

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Computer and Internet tips, plus comments on the articles and columns.

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Digital Dave

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

A reader's system is not recognizing his second installed CD-RW drive; a reader is looking for a way to create and fill out forms on his computer; a reader changed his password on his desktop PC, but now can't remember it!

Dear Digital Dave,

I have two CD-RW drives installed on a Dell Inspiron 531. I had a serious problem that required a reload of Vista. Once the reload exercise was completed, I had the use of only one of the drives. The system's Device Manager shows only the working device. Both drives are identical.

How do I reestablish communications and use of the second drive?

Carl Asher
Oceanside, CA

Dear Carl,

This is not an uncommon problem in Vista. One thing that I have seen happen with optical drives is that other devices, such as flash drives, will grab the logical drive letter if there is no disc in the drive when it boots up. That will mask the CD-ROM drive. It is possible that the second optical drive is also being stationed at the same logical location (i.e., D:), thus showing only one drive. A quick check would be to place a disc in each drive before you boot up. (For some reason, having a loaded CD-ROM in the drives can force recognition.)

If this problem continues, then you may need to assign the logical drive yourself by entering Storage/Disk Management in the Computer Management window. (To open the window, either type "Computer Management" in Start/Search, or select "Computer Management" from Administrative Tools. See Figure 1.)
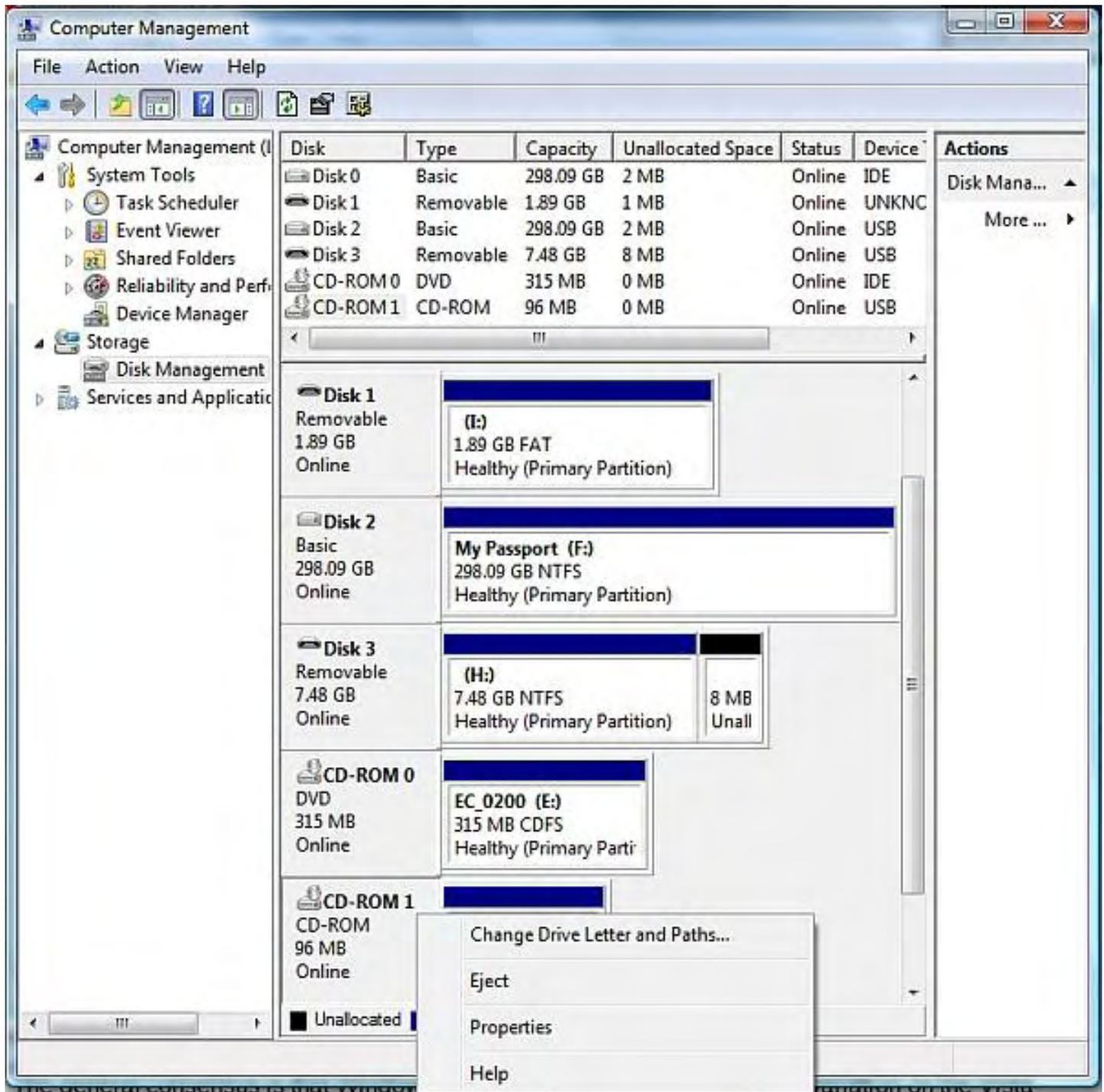
Figure 1. Computer Management window.

At the bottom of the window, the physical drives are listed (Disk 0, Disk 1, Disk 2, CD-ROM 0, CD-ROM 1, etc.). If both CD-ROM (0 and 1) drives are listed, ensure they each have a unique drive letter. If not, right-click on the second drive and select "Change Drive Letter and Paths..." from the menu. Set the drive to a unique letter.

If none of the above works, then there may be corruption in the Registry. If this is the case, then go to this Microsoft Support page (*support.microsoft.com/?scid=kb%3Ben-us%3B314060&x=12&y=13*), which addresses the issue. Carefully follow the instructions. The best bet is the "Fix this problem" link, since then you won't need to mess with the Registry yourself.

Digital Dave

Dear Digital Dave,

I have been an avid reader since The Byte Buyer *days. I am a field supervisor, and I use a lot of forms every day. This requires a lot of writing. Is there a program (preferably free or inexpensive) I can get to put these forms on my laptop and be able to fill them out and then print out the entire form?*

Thanks for all your good advice over the years.

James Murphy
El Cajon, CA

Dear James,

PDF (Portable Data Format) files are your best bet. The more advanced PDF programs such as Adobe Acrobat allow you to create forms that can act as a template for all of your uses. When you are filling them in, they look exactly like the version that you will later print.

ComputorEdge published an issue discussing PDF creation on April 19 (*webserver.computoredge.com/ online.mvc?issue=2716&article=toc*). (Be sure to read the comments after the end of the article from other readers.) Most of the free programs are geared toward creating basic PDFs. You may need to pay a little to get forms-creation as a feature.

Digital Dave

Dear Digital Dave,

I changed (with verifying) the password on my desktop PC about two months ago. Now, I can't remember the new password in order to log on to the admin account. Is there a way around this problem without reinstalling the OS?

I've enjoyed your Q&A for years.

Don
Boulder, CO

Dear Don,

This is not the first time I've received this question. It seems to be a fairly common problem. It is always worthwhile to refresh our memory, so I refer you to last year's question from Charles Milton, dated June 13, 2008. The answer is still valid and the recommendations continue to hold true. I recommend that everyone using Windows create a password-reset disc and keep it in a safe place—but not so safe that you can't find it.

Digital Dave

The Best Free Antivirus Programs

"Who says you get what you pay for?" by Jack Dunning

> While there are many free antivirus programs, there are three that get almost universal acclaim from both users and reviewers.

Antivirus software is like an elephant repellent. As long as there are no elephants around, it must be working. As long as you don't get a computer virus, then your antivirus software must be working. For Windows PCs, it's a requirement to use antivirus software. In the most recent versions, Windows will complain if you don't have protection installed—and won't let up until you do it.

Most new computers come with some type of antivirus package installed—often Norton AntiVirus. Due to the cost of Norton's software (and other systemic problems), users often immediately replace it with their favorite free software. Judging by how rare real computer virus infections have become, most of the antivirus software available must work pretty well.

Most viral infections come as a result of human error. Someone clicks through all the antivirus software warnings and operating system warnings, then downloads some infected software. If users practiced good computer hygiene, then it is quite possible that they wouldn't need antivirus software at all. (See Edgeword this week for tips on computer hygiene.) However, since most people are walking (or I should say sitting) error conditions, especially in an office environment, it's not worth the risk to forego installing the best protection possible.

If you're running a computer at home with the possibility that one of your kids—or your spouse—will use it, then you'll want to get a program that's both effective and inexpensive—preferably free. (The free antivirus packages discussed in this article are for personal use only. Each has a professional version that you can buy and run guilt free, but you're not supposed to install the free version on all of your work computers.)

In preparation for this article, I did in-depth research into which free antivirus program is being widely recommended by reviewers and users. In some cases, I read reviews, while in others I scoured forums and blogs on the topic. My goal was to find the free antivirus programs that inspired the most confidence in both users and reviewers. The only program that I have actually looked over is AVG—and that's only because I've been using it for years. To remove AVG and install another program would not only have been tedious, but unhelpful—especially if the new installation didn't find any viruses missed by AVG.

While the three programs that I've included in this article are not necessarily the absolute best free antivirus programs available, they are certainly the most popular in the computer community. (It's quite possible that there are other free virus-protection killer apps that will run rings around these three, but most people have never heard of them.)

Before digging into the winning free antivirus programs, there are a few questions about free protection programs that should be addressed.

Do Free Antivirus Programs Work as Well as Commercial Versions?

Many people insist that the commercial (paid) antivirus programs easily outperform the free programs. They say that since the program is free, it couldn't possibly get the support needed to keep the protection up-to-date.

While there is no doubt that you will get more features in the paid versions of antivirus software, it is difficult to say that the free versions of the highlighted programs are not as effective as the other commercial programs. All three of the programs listed here have a paid upgrade available for their professional-level software. While each of the companies would like to give an incentive for people to upgrade to the paid version, it would be counterproductive for them to offer a less-than-effective free version. It would hurt their reputation. Since the goal is for you to upgrade to the commercial virus-protection software, each company must offer an effective free product to protect their good name.

Why Not Use All the Best Free Antivirus Programs?

Unlike Web browsers, you don't want different antivirus programs running simultaneously. They will interfere with each other and probably generate numerous errors. Based upon the nature of how antivirus software works, it's necessary to choose one. You may want to store the better programs available on your computer, but only one should be active. Then, if you do run into a virus problem that one program can't resolve, you can deactivate the first while trying a secondary program. Pick only one for your active program.

Antivirus Programs Can Make You Think You Have a Virus

When antivirus programs run a scan of your hard drives looking for viruses, unless you have limited the scan parameters, they will check every file on your system. This both takes time and slows down your computer. Generally, it's a good idea to schedule these scans for late at night, but even then a scan can take hours. When a computer slows down due to a virus scan, people often think that the slowdown may be caused by a virus. (In fact, anytime something doesn't seem right, people often jump to the conclusion that they have a virus.) Pausing or stopping the scan will clear the system slowdown.

Cookies and other common files are usually noted by the antivirus software, since this is a common method used to track computers—especially in spyware. However, cookies are not viruses, but an essential

function of Web browsers for many sites. Although some may be associated with spyware, do not be alarmed by the existence of cookies on your system.

The Three Most Popular Free Antivirus Programs

While there are many free antivirus programs, there are three that get almost universal acclaim from both users and reviewers. They are Avast! Home Edition (*www.avast.com/eng/download-avast-home.html*), AVG Anti-Virus Free Edition (*free.avg.com/download-avg-anti-virus-free-edition? cmpid=fr_bn_free_670*), and Avira AntiVir Personal Edition (*www.free-av.com/en/products/1/ avira_antivir_personal__free_antivirus.html*). (These programs are listed in alphabetical order since the opinions are so varied on which program is the best. It is notable that all the program names start with "av"—maybe a requirement for good antivirus software.) It is probable that any of these programs will do the job for you—especially if you have good computer hygiene.

The ratings and download numbers for each program were taken from CNET's Download.com. This was done because CNET actually did a short review of all three programs, giving each a five-star rating. There are extensive user reviews for each program at CNET, which is where you will get the real-world answers to your questions. Plus, CNET checks all of the software it offers for download for spyware, viruses and other malware.

Avast! Home Edition

As of this writing, Download.com has had 46,683,617 downloads of Avast! Home Edition. Users have given it a 4.5-star rating. Download Avast! Home Edition (*download.cnet.com/Avast-Home-Edition/3000-2239_4-10019223.html?tag=mncol*).

People who have done testing of Avast say that it "comes in slightly behind Avira in terms of detections." This is a test that can vary widely depending upon when the detection test is run, what viruses are being detected, and how good the software is at keeping the virus database up-to-date.

CNET editor's said, "Though it took quite some time to run, we're impressed with this application's boot-time antivirus scan." This is important because the most insidious viruses embed themselves in parts of the operating system that are impossible to root out once the system is fully loaded. This seems to be the major advantage that most people gave to Avast.

AVG Anti-Virus Free Edition

By far the most popular, CNET's Download.com has had 194,092,118 downloads of AVG Anti-Virus Free Edition. However, AVG has a slightly lower 4.0-star user rating than Avast's 4.5. Download AVG Anti-Virus Free Edition (*download.cnet.com/AVG-Anti-Virus-Free-Edition/3000-2239_4-10320142.html? tag=mncol*)

Although AVG is still the most popular program based upon downloads, the Web word is that "AVG is not what it used to be, it now scores low in detections." However, "AVG Free Edition is the smallest antivirus scanner we've tested and may well be the best choice for an older PC with limited system resources."

"Unlike most free antivirus software, [AVG] will automatically check for updates so your virus protection remains up-to-date." Any decent antivirus software needs to automatically update the database. Otherwise it will soon become useless. All those listed in this article do. "Another bonus is that you can run it in Windows Safe mode." Running the software in the Windows Safe mode is similar to the boot-time scan

done by Avast, since it can check the system without everything being loaded.

Noted by CNET editors: "Should a virus create serious system problems, AVG creates a rescue disk to scan your computer in MS-DOS mode."

AVG Free Edition has both an e-mail scanner, plus "the major change over Version 8 is that it now includes LinkScanner Active Surf-Shield, which provides real-time protection against malicious Web pages."

Avira AntiVir Personal Edition

There have been 40,202,288 downloads of Avira AntiVir Personal Edition at CNET's Download.com. The CNET user rating is the lowest of all three at 3.5 stars. Download Avira AntiVir Personal Edition (*download.cnet.com/Avira-AntiVir-Personal-Free-Antivirus/3000-2239_4-10322935.html?tag=mncol*).

Many people were annoyed by the "Avira 'pop-up' offering you a chance to upgrade from the free edition."

Avira AntiVir Personal also "can be used in Safe Mode, a definite plus for removing stubborn infectors or cleaning a system that might otherwise be unable to boot into Windows."

There was also confusion about setting up the automatic update, but it was eventually cleared up.

Which One Do You Use?

It seems that any of these programs will do the job for most people. It may come down to personal preference. There are literally hundreds of other free antivirus programs out there. If you have one that you are particularly fond of, please leave a comment and it will be attached to this article.

If you can't decide which program to use, then you can follow the advice I came across a number of times: "Buy a Mac!"

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*

Comodo Internet Security

"A notable newcomer to the security arena." by Michael J. Ross

> For Windows computer users seeking a high-quality and low-cost security suite to protect their computers from viruses and hackers, Comodo Internet Security is certainly worth trying out.

Computer viruses, worms, Trojan horses and other forms of malware pose just as much a threat now as they did during the 1980s, when personal computers became widespread, and before the advent of the Web. Back then, viruses were typically spread inadvertently from one computer to another via diskettes. In our current era, these virtual viruses have a far more widespread and efficient vector for dissemination: the Internet. People nowadays will send a program or other potentially infected files to dozens of friends in their contact list, without any hesitation and without bothering to check whether or not that file might be the carrier of some electronic nastiness.

On the other hand, we have better tools at our disposal for fighting malware. These include dedicated applications for detecting and eradicating viruses and spyware. In the realm of e-mail, more people are switching over to Web-based e-mail services, and the better ones—such as Gmail and Yahoo Mail—will automatically scan all attachments to every message to confirm that none are infected. For instance, when you attach a file to a message you are composing in Gmail, the service will automatically scan for viruses, and not allow you to send a message with any infected attachments. When you receive a message with attachments from someone, they are scanned when the message is delivered into your inbox, and when you open the message. Other valuable tools include hardware and software firewalls, which not only can prevent outside attackers from accessing your computer's hard drives to infect them with botnet programs, but also block spyware from secretly transmitting your confidential information to outside recipients.

Given all of the threats that you face when connecting to the Internet, and especially when downloading programs, it is no wonder that one of the most popular types of applications nowadays is the security suite, which combines antivirus and firewall functionality, and sometimes other capabilities as well. There are many software vendors out there—some with more than a decade of experience battling malware—that offer a wide range of security suites, with various features and price tags. Over the years, several of the commercial (non-free) security suites have sadly become quite bloated, in terms of memory usage, disk space usage, user-interface complexity, and asking price. Even worse, they can interfere with other programs, and slow down or even block legitimate actions.

As a result, there has been increasing interest in security suites that are lean in size and cost—in other words, powerful yet still affordable. We will explore one such product in this article.

Introducing Comodo

Some of the earliest security software vendors, such as Norton and Symantec, have been around for ages, and consequently are well known to most computer users. Comodo Security Solutions (*www.comodo. com/*), a relatively newcomer to the malware battle, may not be a household name yet, but for computer users interested in safeguarding their personal data and the integrity of their computers, the firm is worth learning more about. Comodo is headquartered in Jersey City, with offices in India, Israel, Italy, Japan and the United Kingdom.

The company's primary business is providing digital security services to top-level domain-name registrants;

in other words, they provide the SSL (Secure Socket Layer) certificates that allow an Internet user to send their credit card information to an e-commerce site over an encrypted connection—thereby greatly assisting consumers as they try to purchase goods and services online safely, and in turn assisting Web-based businesses that want to make this possible. Comodo has more than 100,000 customers, in more than 100 countries, and over 5,000 business partners worldwide. Further information can be obtained on their Web site.

Figure 1. Comodo home page.

In addition to the aforementioned security certificate services, the company offers products in most major areas of online security: anti-spam, smart cards, access control encryption, digital signatures, USB hubs, secure e-mail messaging, anti-hacking guards, secure Internet faxing, password management, secure online meetings and more. We will focus on its security suite, which is designed to keep electronic and human attackers away from your computer.

Antivirus/Firewall Comodo Combo

Comodo Internet Security (hereafter CIS) combines both antivirus protection and a software firewall. It comes in two editions, and the Pro edition provides live technical support for $39 per year. Anyone interested in trying this support, at no charge, can sign up for the 30-day free trial. Both editions support Windows XP (with Security Pack 2 required) and Vista, and come in 32-bit and 64-bit versions. For installation, the application will need at least 70 megabytes (MB) of free space on your hard drive (105MB for the 64-bit version). When running, it will need at least 64MB of system memory.

Figure 2. CIS page.

To take this security dark horse out for a ride, first go to the CIS page (*personalfirewall.comodo.com/download_firewall.html*). In the drop-down list box, specify either 32-bit or 64-bit; the former is the default. Then click the large gray Download button. Kudos to the company for not requiring a laundry list of personal contact information just to obtain the software—a counterproductive move pursued by a growing number of freeware and shareware vendors nowadays. Save the installation file to your hard drive, and then open the file to begin the process.
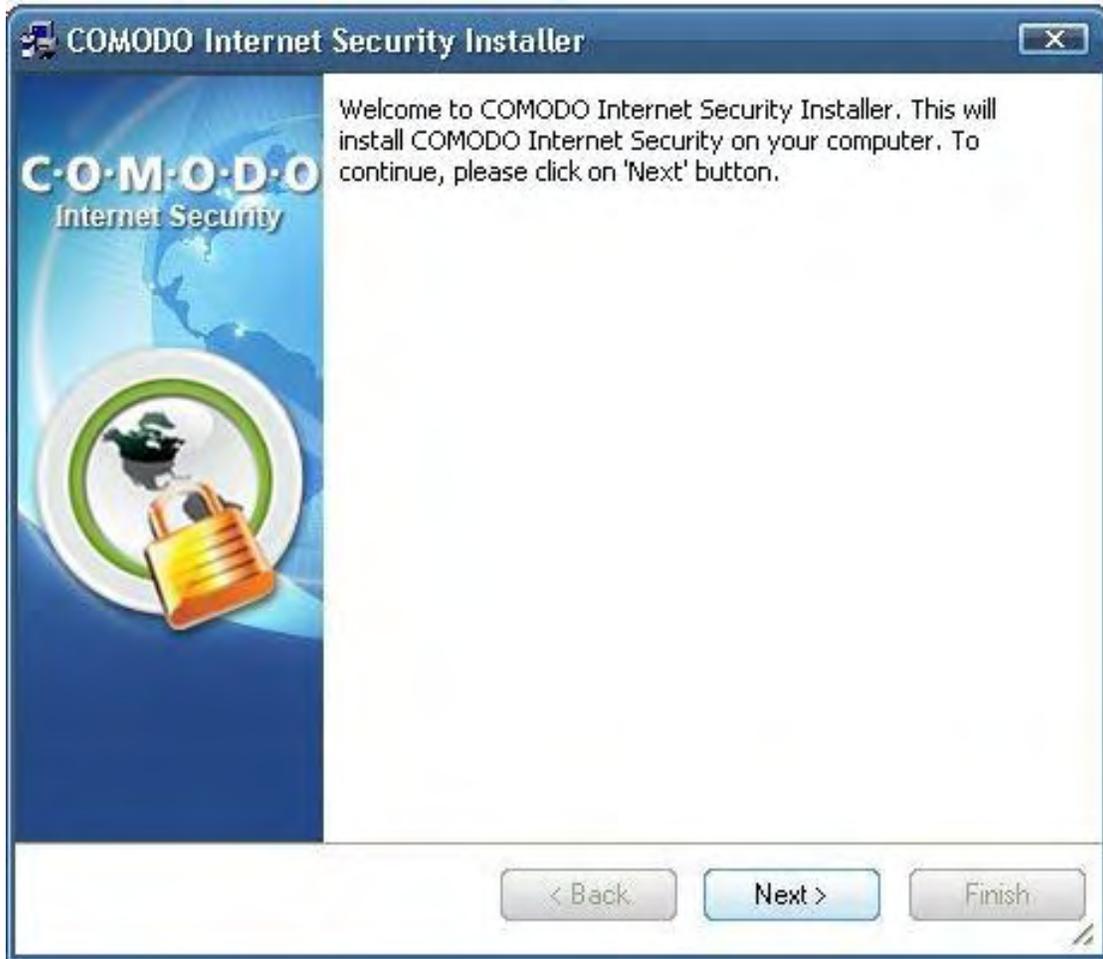
Figure 3. Installation — start.

If you have any other software firewall currently installed on your computer (even if it is not running), the CIS installation wizard will alert you, but does not require that the competing program be uninstalled.
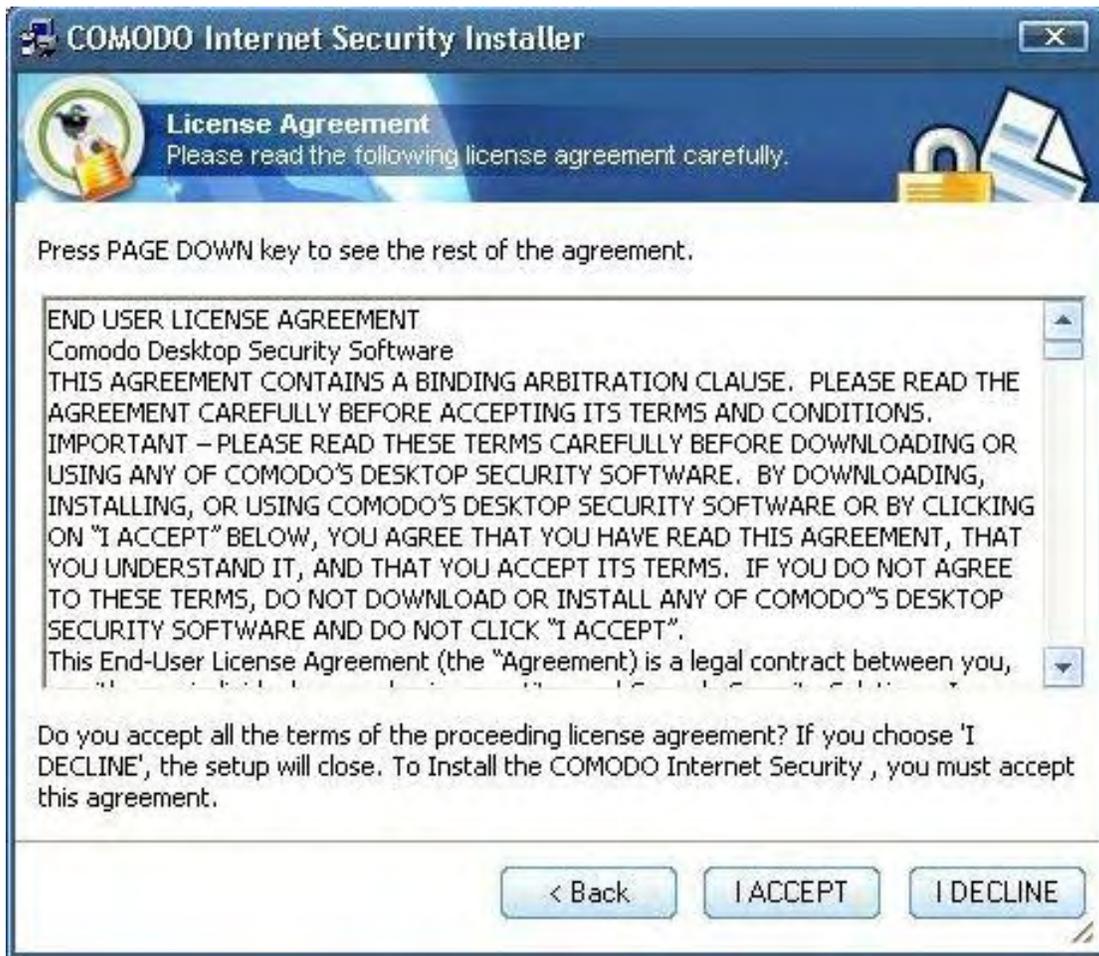
Figure 4. Installation — license agreement.

After accepting the license agreement, you can change the installation directory from the default, C:/ Program Files/COMODO/COMODO Internet Security, if desired.

Figure 5. Installation — destination folder.

Next, the configuration wizard starts.

Figure 6. Configuration — start.

You have the option of installing the antivirus product or the firewall, or both. Unless you already have one such type of application installed and working well on your computer, it is best to install both products.

Figure 7. Configuration — select products.

You can then choose whether or not to participate in the Threatcast community, which gathers and reports information about Comodo security usage, anonymously.

Figure 8. Configuration — Threatcast.

Comodo offers a toolbar that integrates into your Web browser that attempts to detect and report malware-infected Web sites, block pop-ups, enforce privacy controls, and perform Web searches using Ask.com. You can elect to have the toolbar added to your browsers, but I suspect most users will opt out.

Figure 9. Configuration — SafeSurf Toolbar.

The penultimate step is to activate your newly installed copy of CIS. You have the option of providing an e-mail address in order to receive promotional messages from Comodo.

Figure 10. Configuration — activation.

Lastly, the configuration wizard prompts you to perform an initial scan on your system; this is highly recommended.

Figure 11. Configuration — initial scan.

The process begins by checking with the Comodo servers to update the program's virus signatures (think of them as the viruses' digital fingerprints).

Figure 12. Virus signatures update.

Once the signature updating is finished, CIS begins scanning all of the partitions on all of the hard drives on your system. (Presumably, it would also scan attached removable media, such as flash drives.)
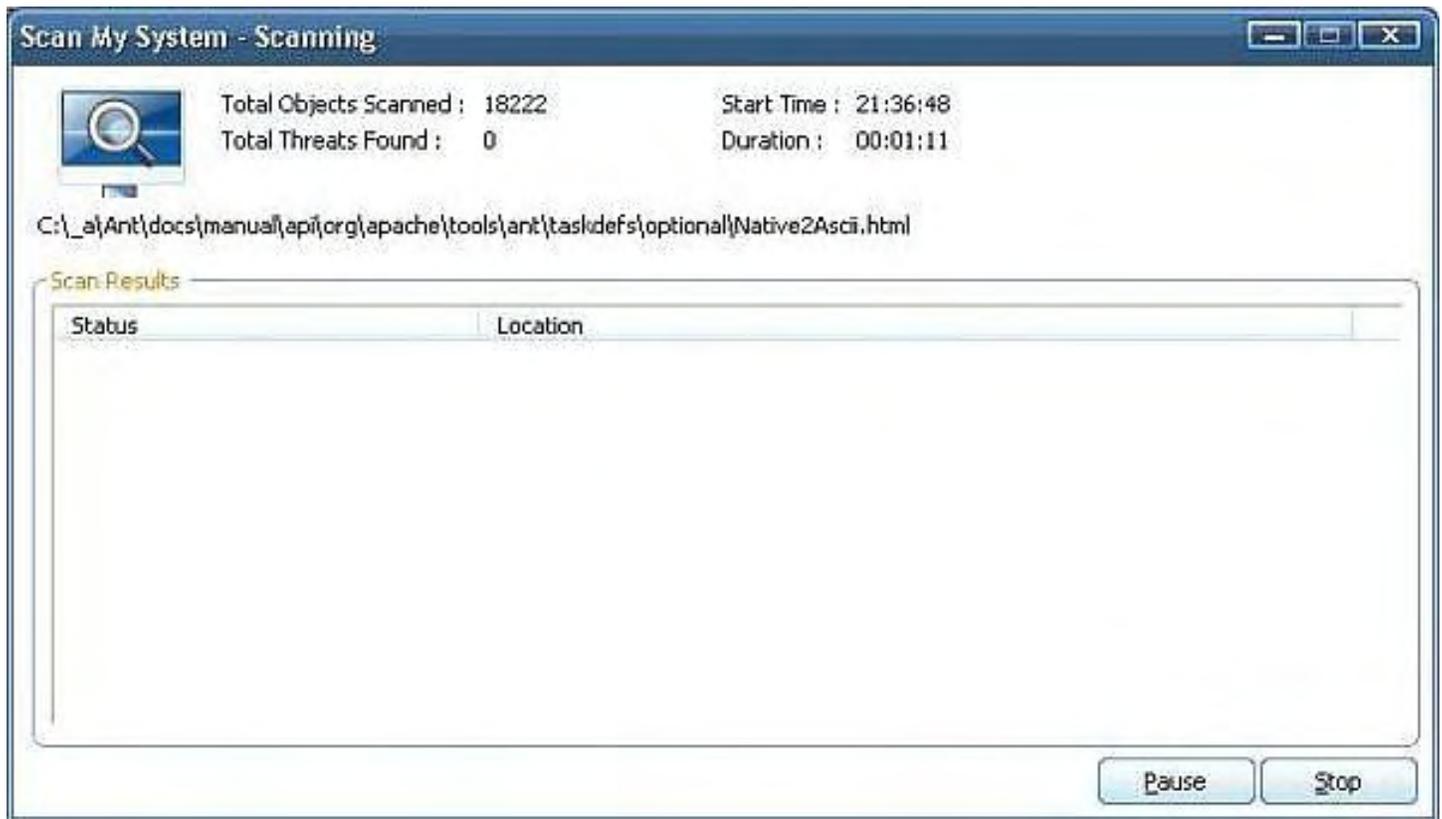
Figure 13. Scanning in progress.

The scanning process can take some time, depending upon the size and number of the files that CIS has to check. Yet its speed is comparable to that of any other virus- or spyware-scanning application. For instance, on my system, CIS scanned more than one million files, and it took just under 53 minutes. In terms of the results, CIS discovered some threats that other security programs had missed.
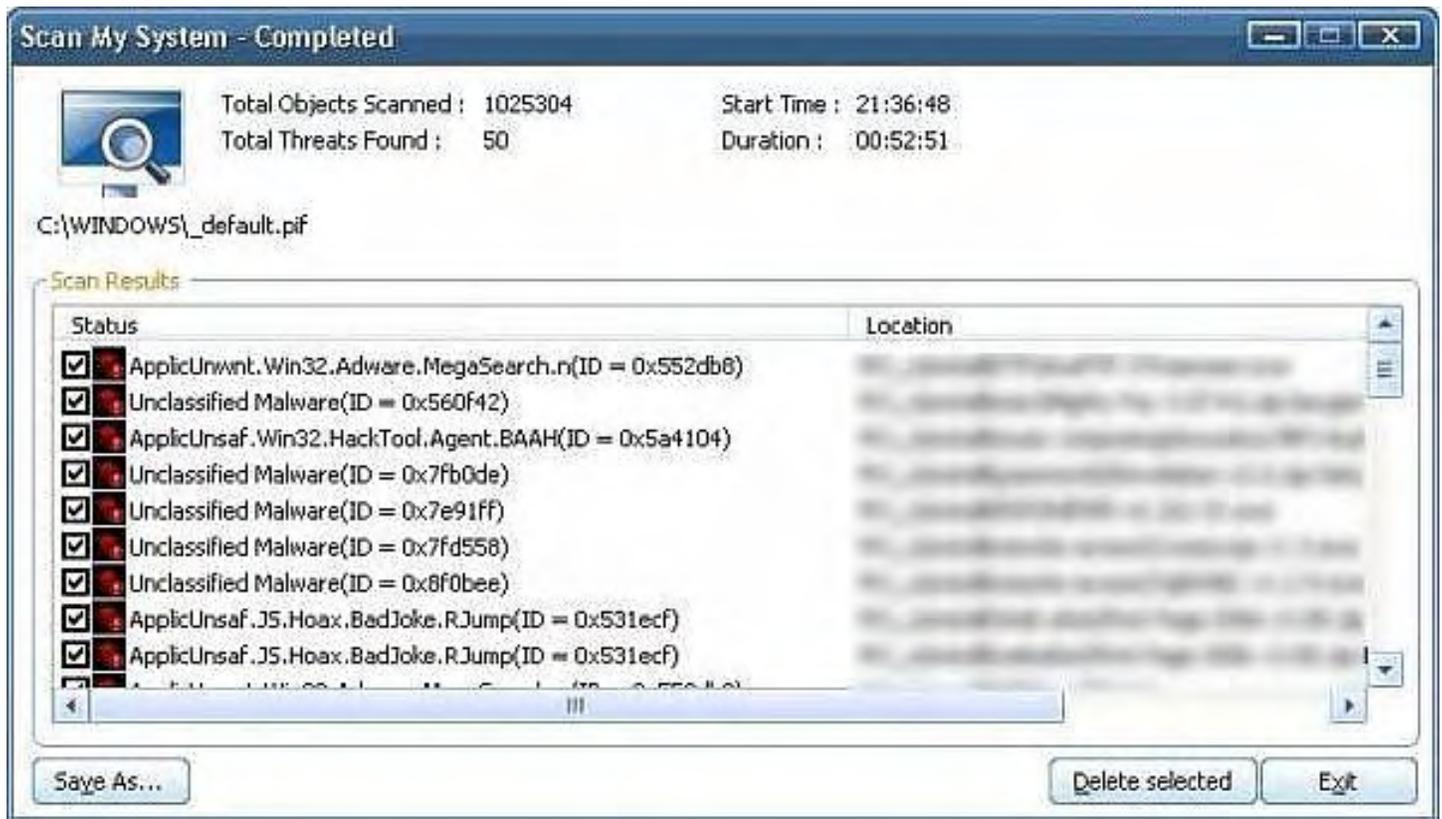
Figure 14. Scanning completed.

The scanning results dialog box lists the threats discovered, if any, and the file path for each one (they have been intentionally blurred in the image above). The dialog box allows you to delete any of the infected files (CIS does not attempt to clean the files, unlike some antivirus programs). It also has an option to save the list as a text file.

An upgrade offer pops up when CIS is first started. This is understandable, as the company certainly has every right to try to monetize this software, which is made available at no cost.
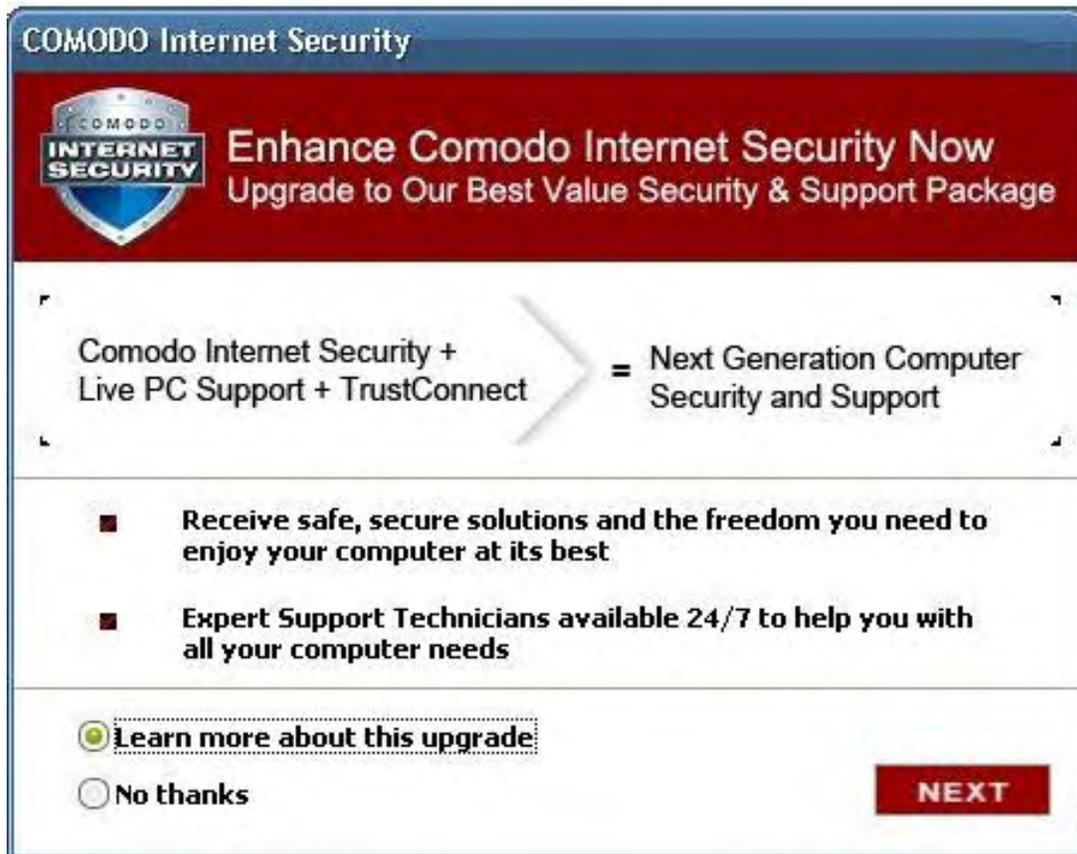
Figure 15. Upgrade offer.

Minor Blemishes

All in all, CIS appears to be a quality product. There are only a few obvious areas for improvement. First, the scanning results dialog box should be made resizable, since the threat names can be rather lengthy (e.g., "ApplicUnwnt.Win32.Adware.MegaSearch.n(ID=0x552db8)") and the file paths can be much longer than that. This would be particularly helpful if the user wanted to take a screenshot of the results, without the threat names and file paths being cut off—although you could achieve the same goal using the Save As... feature, and then print from the text editor. But for basic readability, the dialog box should be resizable.

The second problem is revealed when the user completes the initial scan, and discovers that the installation wizard is still running. The user is prompted to restart the computer. It would be more intuitive if the installation process were to complete prior to the initial scan, and the user instructed to restart the computer, at which time the initial scan would begin—an approach used by many similar programs.

Figure 16. Installation — restart system.

Third, when being closed the first time, CIS crashed. Fortunately, no data was lost, which is a risk with crashes in applications such as word processors. In subsequent instances of closing, CIS did not crash; hence, this most likely was a one-off problem.

Figure 17. CIS crash.

Aside from the aforesaid weaknesses, CIS is a valuable and attractive application. The user interface is neatly laid out, and organized into five sections: Summary, Antivirus, Firewall, Defense+ and Miscellaneous.

Figure 18. CIS user interface.

For Windows computer users seeking a high-quality and low-cost security suite to protect their computers from viruses and hackers, Comodo Internet Security is certainly worth trying out.

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

Windows Vista (Windows 7) Tips and Tricks

"Why Wait for Windows 7?"
by Jack Dunning

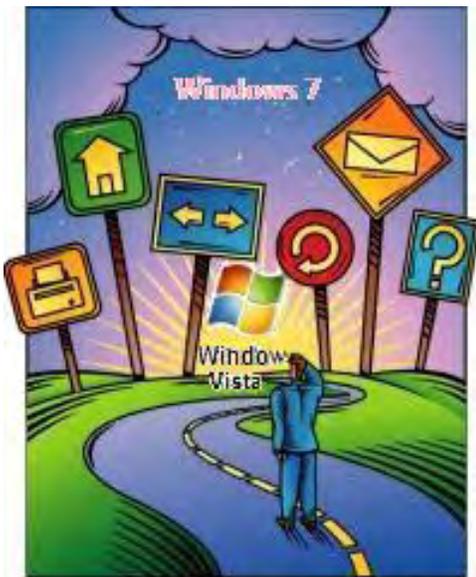> Windows 7 RC is available for free download only until the end of July. So if you're planning to give it a shot, then you should download it now and save it for when you need it.

If you know that you want your next computer to be a Windows 7 machine, and you have either an old computer (maybe an XP) laying around, or you're planning to buy (or build) a computer without the operating system installed, then there are steps that you can take right now to get Windows 7 up and running—at least until Windows 7 is officially released by Microsoft, probably in October.

The problem with going to an electronics store and purchasing a pre-built computer is that it most likely will come with Windows Vista installed. Vista being installed is not the issue in and of itself, but free upgrades to Windows 7 from Vista won't start until July 1. That means prior to that date, you will be forced to pay Microsoft twice to get Windows 7 on your new computer—unless you use Windows 7 RC (Release Candidate).

Windows 7 RC is free to anyone until the end of July. As Microsoft continues to work on Windows 7, this version will automatically be updated for anyone using it. While it is scheduled to expire next year, Windows 7 RC can serve as a stopgap operating system until the paid version is available for upgrade. The other advantage to installing Windows 7 is, if you haven't previously used Vista, you won't need to deal with the Vista learning curve. Windows 7 is very similar to Vista, but there are enough subtle differences that it wouldn't hurt to skip Vista.

Windows 7 RC is available for free download only until the end of July. So if you're planning to give it a shot, then you should download it now and save it for when you need it.

I would never recommend installing Vista on an old XP, but that's not the case with Windows 7. It may be ideal to have more power than most XPs provide, but many of them will handle the new operating system just fine. I recently installed Windows 7 RC on my older Compaq Presario V4000. It's been running for a while now and it seems much smoother than Windows XP. Because of the limitations of the hardware, I don't have some features, such as Windows Aero, available. (I haven't found Aero in Vista to be of much value in any case.)

Before you start installing Windows 7 RC, there are a few things that you should consider. First, if the target computer does not have at least one gig of memory and a one-gigahertz or faster processor, then don't bother. Those are the minimums required for Windows 7. There is a Windows 7 Upgrade Advisor (*www.microsoft.com/windows/windows-7/upgrade-advisor.aspx*) available that will check out your system.

The Windows 7 RC does not upgrade Windows XP, but replaces it with a new install. That means if you have any files/data that you want to save on that machine, you will need to copy them to another media prior to installation. If you are upgrading a Vista computer, then you will lose your Vista installation. If it's a registered version of Vista, then you will need to do a new installation of that copy of Vista to move it back onto the system. The point is that this installation is not something that should be done to your primary workhorse computer. You should use either a brand-new piece of hardware, or an older machine that is not mission critical. The reason for this is not so much out of a concern about Windows 7 as it is about losing your computing bearings in an important task-driven machine.

Getting Your Copy of Windows 7 RC

To get your copy of Windows 7 RC, you will be creating an installation disc on a DVD. The file that you download from Microsoft is a single ISO image that needs to be properly burned to a blank DVD disc.

The first step is to download the file from the Microsoft Windows 7 Release Candidate: Download Instruction page (*www.microsoft.com/windows/windows-7/download.aspx*). You will need to know whether the 32-bit or 64-bit version is right for you (see Figure 1). In most cases, older equipment will be using the 32-bit version. If you're building a new machine, look for a 64-bit system. That's the future.
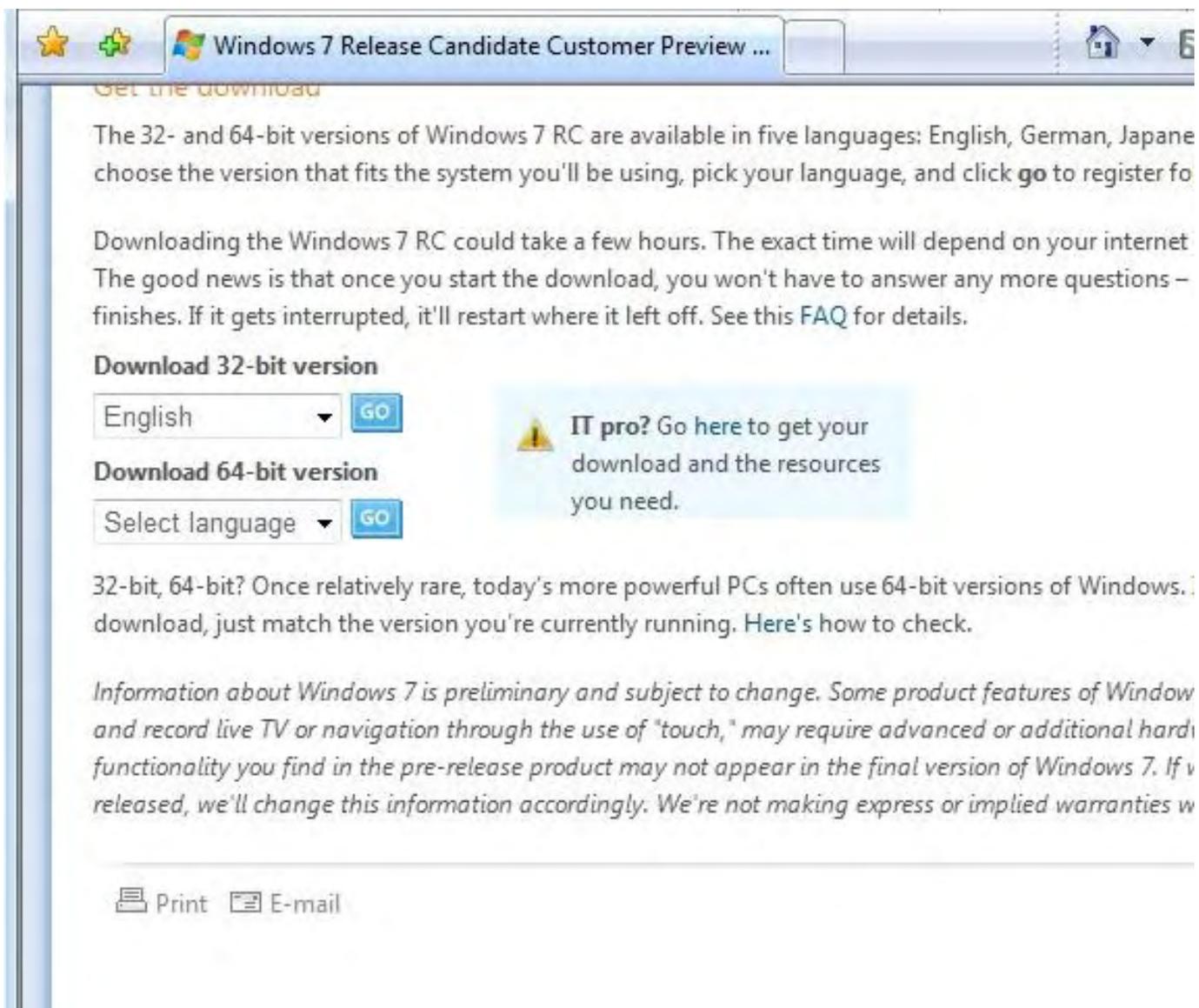
Figure 1. Select 32-bit or 64-bit and your language.

Before you can start downloading, you will need to create an account using your e-mail address, which Microsoft will verify with a return e-mail link.

Once you've downloaded the ISO image, you must convert the file into an installation disc. To do this, you will use a DVD burner (writer) and the appropriate software. Microsoft mentions two different programs for burning the ISO image to a DVD. With the first program, I found the learning curve a little too steep. The software was probably more capable than I needed for a simple one-step DVD-burning procedure. The second program, Active ISO Burner (*download.cnet.com/Active-ISO-Burner/3000-2646_4-10602452.html? tag=mncol*), was quick and easy to use. Put a blank DVD in the drive, select the downloaded file, select the drive, then click Burn (see Figure 2).
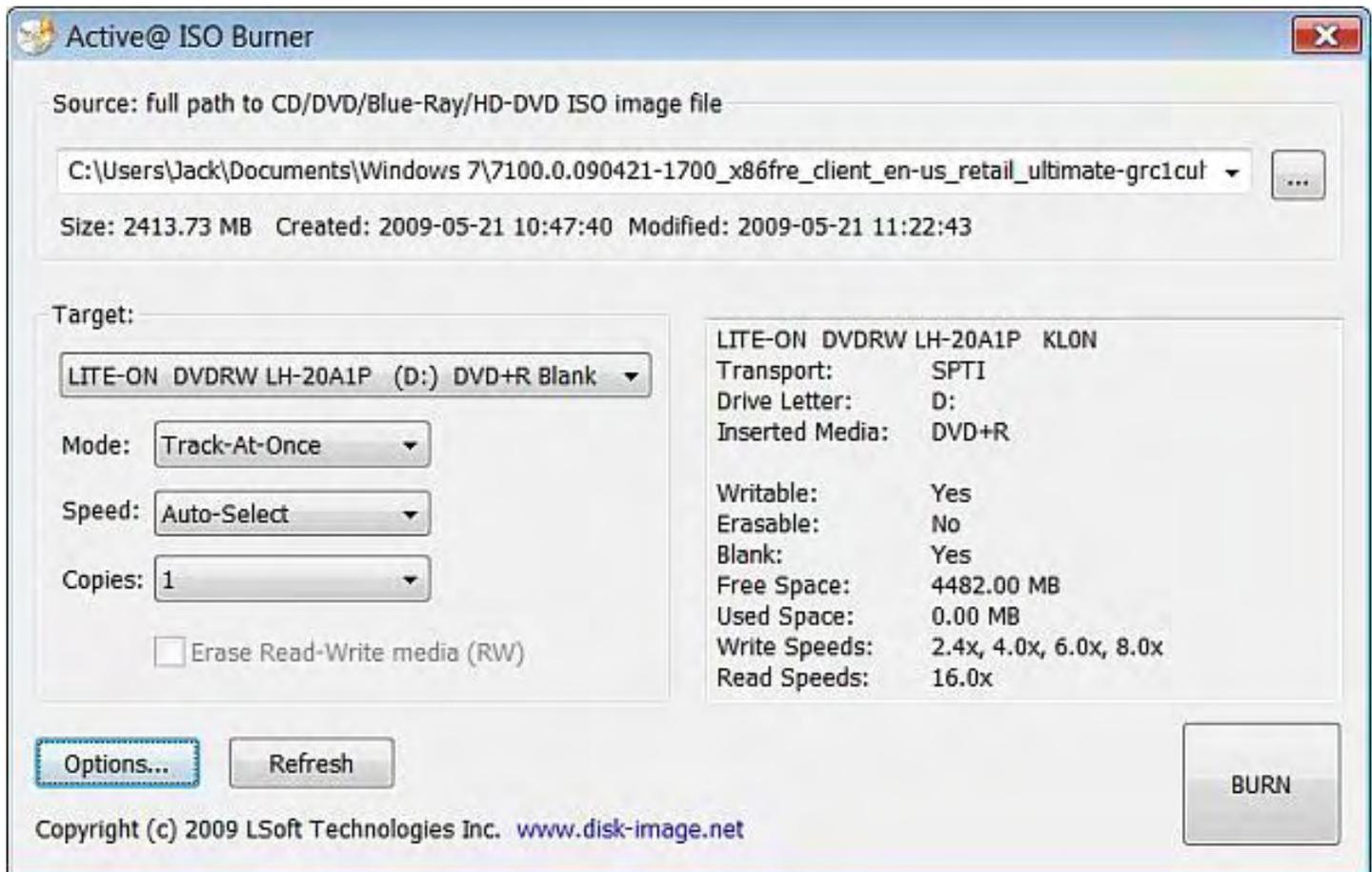
Figure 2. Active ISO Burner is a simple one-step process.

Once you've created the DVD containing Windows 7 Release Candidate, the installation process is as easy as inserting the disc into the DVD drive in the target computer. In my case it took a number of attempts before Windows 7 actually installed. (After checking the Web, I saw that this often happens with older computers.) I'm not sure whether I did something to make the install work, or if Windows 7 has routines that bring it a little closer to installation with each attempt. The process would start fine, but toward the end, I would get an error message stating that there was a problem configuring the system, but keep trying. It would then reboot and roll back to XP. Next, I would restart the Windows 7 installation. I had given up hope that I would complete the installation, but there was no reason to stop trying. I upgraded Windows XP SP2 to SP3, although I don't know that it made any difference. Eventually, the installation was successful.

It probably took four or five attempts. My guess is newer hardware would yield quicker success.

Now my old Compaq is running Windows 7 RC. So far, it seems to have less problems than it did running XP, but I need to do some more testing. The video drivers required for Windows Aero did not install, and I suspect that they don't exist for this machine. However, the video display was fine and the test video of wild animals ran fine with very little hesitation.

In the coming weeks, I will compare Vista features with Windows 7 as more tips and tricks are introduced.

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

"Viruses and the Mac" by Wally Wang

For now, viruses aren't a threat to the Macintosh, but it's definitely something to keep watching because this threat will likely arrive sooner than you might expect. Also, a look at the Sandvox easy Web page editor; and a peek at the new Safari 4 beta, which lets you select multiple Web sites as home pages.

Viruses are obsolete, so technically, you don't need an antivirus program. What you really need is an anti-worm, anti-Trojan horse and anti-spyware program. However, it's much simpler just to lump all these different threats together under the term "virus," since it's easier for people to understand.

Technically, a virus is a program that attaches to another file, such as a program file or a document file, such as a Microsoft Word document. The only way a virus can spread is if you share an infected file.

In the old days, when programs could fit on a floppy disk, people would commonly copy (often illegally, of course) programs to a floppy and share the programs with other computers.

Nowadays, programs are usually so huge and consist of so many separate files that it's not practical to share program files anymore. As a result, any virus that relies on infecting program files is basically obsolete and poses little threat to everyday users.

The few remaining viruses out there are the ones that infect document files. Since the most popular types of documents to share are Microsoft Office (Word, Excel and PowerPoint) files, these types of viruses use the macro programming language of Microsoft Office to attach themselves to Office document files. As a result, these types of viruses are called macro viruses.

If you don't share Microsoft Office files, you have nothing to worry about since a macro virus can't infect your computer any more than Dutch Elm disease can threaten the life of your goldfish. However, if you do use Microsoft Office, you do have something to worry about.

On the Macintosh, macro viruses are not a threat, since they rely on the Visual Basic for Applications (VBA) programming language, which Office 2008 for the Mac doesn't offer. Because Microsoft released a less than full-featured version of Office for the Mac, it also prevented macro viruses from spreading as a result.

(If you use an older copy of Office 2004 for the Mac, you may need to worry about macro viruses though, since Office 2004 for the Mac does offer VBA.)

Worms, Trojan Horses and Spyware

What's more troublesome than a virus are worms, Trojan horses and spyware. A worm is like a virus that can spread by itself without infecting anything at all. This gives worms the ability to propagate on their own through local area networks or through the Internet. The key to stopping a worm is to use a firewall, and the key to removing a worm is to use a (misnamed) antivirus program.

A Trojan horse is simply a program disguised as something else. Many pornography sites offer special media players that you must download before you can view the X-rated content. The moment you download this media player, the Trojan horse gets inside your computer.

By themselves, worms and Trojan horses are harmless. What makes them dangerous is the payload that they might contain. At the simplest level, a payload can be destructive (erase the hard disk). On a more complex level, a payload can be spyware.

As the name implies, spyware spies on your computer activity and does something as a result. The simplest spyware are keystroke loggers, which are programs that capture anything you type on your keyboard, which makes them handy for snaring passwords, credit card numbers, or other sensitive information.

While worms and Trojan horses sneak into a computer to drop a payload, spyware infects a computer and communicates over the Internet. A keystroke logger will periodically send out all captured keystrokes to a hacker, who can then scan the captured keystrokes for useful information, such as passwords.

Another type of spyware is called a browser hijacker. This program simply waits for you to load your browser and then it redirects your browser to specific Web sites, such as pornographic Web sites. No matter what you do, browser hijackers often keep you from visiting other Web sites and force you to visit something else.

The more insidious spyware programs pop up ads on your screen at random times. Not only is this annoying, but it can prevent you from doing anything productive with your computer at all.

The latest type of spyware is the botnet. These types of programs infect a computer and allow a hacker to remotely control your computer. The main purpose of this is to send spam through unsuspecting users' computers. Since many spam filters block e-mail sent from known spammers' e-mail accounts, botnets allow spammers to route their spam through innocent users' computers instead.

A firewall can block a worm from getting in, but you can only prevent Trojan horses from infecting your computer by not downloading unknown files on to your computer.

While antivirus programs can detect and remove viruses, worms and Trojan horses, you'll need a dedicated anti-spyware program to remove spyware and some Trojan horses as well. Even if spyware does infect your computer, a two-way firewall that blocks outbound connections can keep spyware from sending your information out to the Internet.

For now, the Macintosh has remained relatively virus, worm, Trojan horse and spyware free. There have been a handful of malicious programs written for the Macintosh, but through the low market share of the Macintosh and the more restrictive nature of Mac OS X, it's perfectly possible to use a Macintosh with no defenses other than its built-in firewall.

If you're still paranoid about viruses and other threats attacking your Mac, get a free copy of iAntiVirus (*www.iantivirus.com*). The majority of the commercial antivirus Macintosh programs (such as Norton Antivirus for the Mac) simply waste time protecting against Windows viruses, worms and Trojan horses, which is utterly worthless in protecting your Macintosh.

While the Macintosh isn't immune from viruses and other threats, it is inherently more secure than Windows XP and basically equivalent to Vista/Windows 7 in terms of security. For now, viruses aren't a threat to the Macintosh, but it's definitely something to keep watching because this threat will likely arrive sooner than you might expect.

Sandvox: Easy Web Page Editing

If you have a Macintosh, you have a free copy of iLife, a collection of handy programs for managing digital photographs (ipHoto) or recording and modifying audio files (GarageBand). If you want to create simple Web pages, you could rely on iWeb, which comes with iLife, but if you find yourself bumping up against iWeb's limitations, you may want to try Sandvox (*www.karelia.com/sandvox*).

With traditional Web page editors (such as Dreamweaver), you start with a blank page and then add text and graphics to make your Web page look pretty. While this gives you maximum flexibility, it also makes creating decent Web pages much harder for someone not familiar with graphic design.

With Sandvox, you focus on the content of your Web pages (text and graphics) and then select various themes to give your Web pages a uniform appearance. If you don't like one theme, just select another and Sandvox automatically changes the appearance of all your Web pages.

To make designing a Web site easy, Sandvox offers predefined pages, such as for displaying a contact form, YouTube video, or file-download page. In case you need to write custom HTML, PHP, or JavaScript code, you can add that in Sandvox too. Sandvox is similar to iWeb, but with more themes and more flexibility. Think of Sandvox as a cross between Dreamweaver's power and iWeb's simplicity.

Figure 1. Sandvox offers pre-defined Web pages that display common features.

Since most novices aren't likely to write their own HTML or JavaScript code to display information on a Web page, Sandvox also offers something called pagelets, which let you display items on an existing Web page, such as RSS feeds or page counters. By using pagelets, you can add functionality to an existing Web page without the hassle of writing code yourself.

Figure 2. Pagelets let you add features to a Web page.

Sandvox is available for $57 (or $97 for the Pro edition), but you can download a free trial and try the program yourself. After using Sandvox, you may find the price is worth it over the limitations of the free iWeb program.

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

If you want a peek at the future, download a copy of the Safari 4 beta (*www.apple.com/safari/download/*) for Windows or Mac. Perhaps the most interesting feature is its home page feature.

With current browsers, you're limited to selecting a single home page. With the new Safari 4 beta (mimicking a feature that is already available in the Opera browser), you can select multiple Web sites as home pages and view thumbnail images of your favorite Web sites.
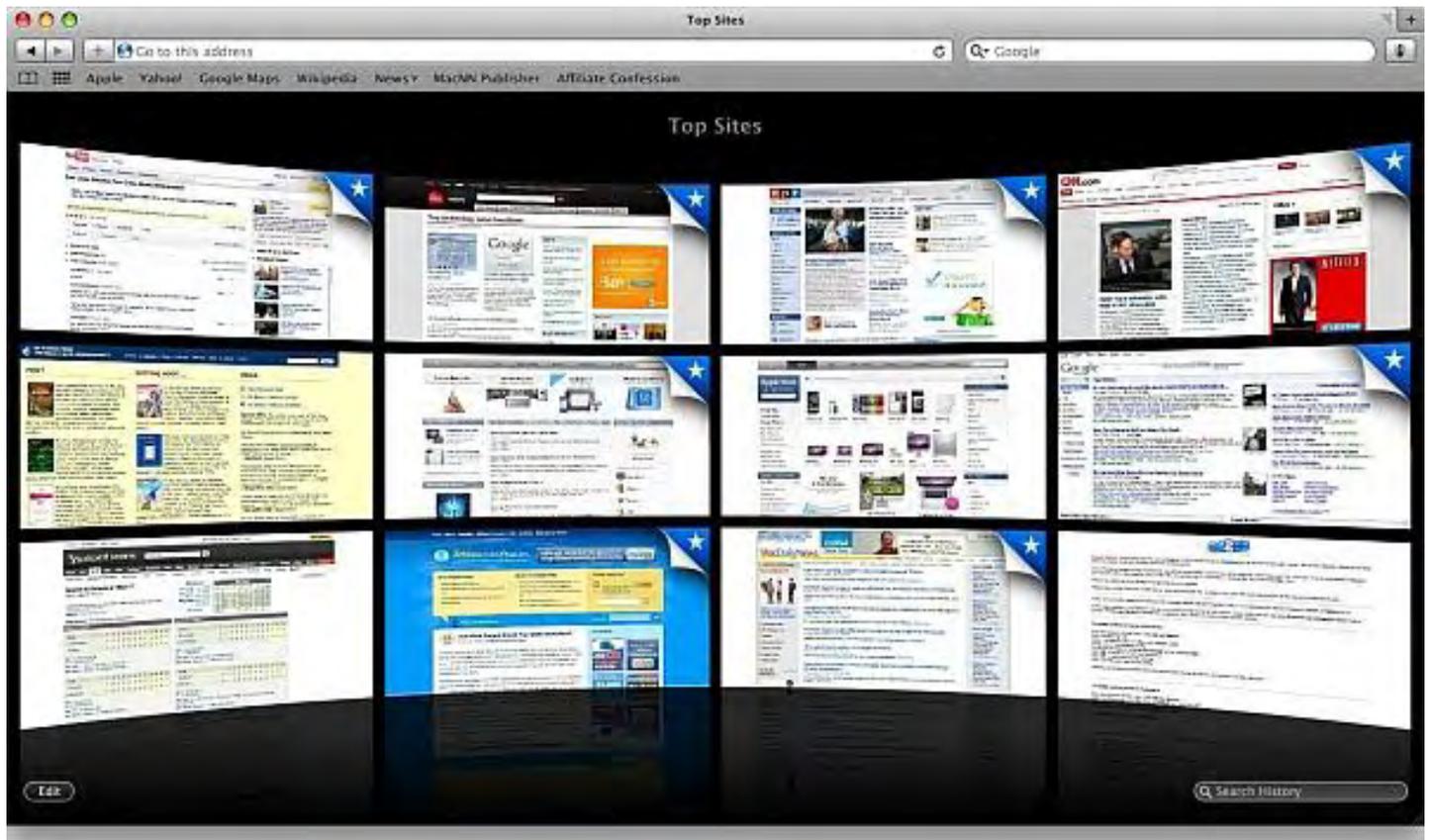
Figure 3. Safari 4 beta displays multiple home pages as thumbnail images.

By viewing multiple home pages, you can click on the one you want to view. Now you don't need to limit yourself to a single home page when you can have multiple home pages based on your various interests and what you want to view at any given time.

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/*).
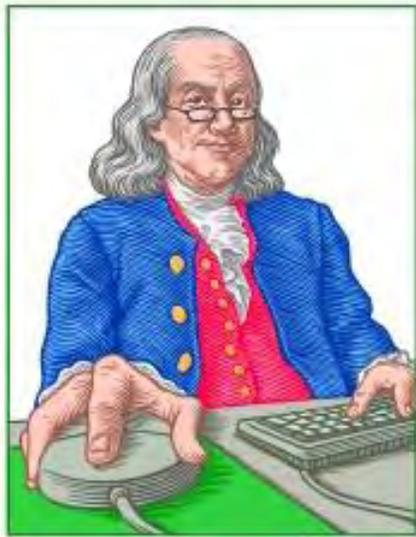
Little Linux Lessons: Tips and Tricks from Users

"Linux users share ideas and ask for help." by ComputorEdge Staff

Opinions are needed about important Linux questions that will either help steer people toward Linux—or warn them away. Also, a tip on the cal command to display a calendar, and a call for topics for the June 12 Linux issue.

A Few More Questions

When reviewing the comments that we have received for the upcoming Linux issue, there are a number of questions that keep arising. We would like to hear more opinions about these questions that will either help steer people toward Linux, or warn them away—as appropriate.

1. It seems that Linux is not for everyone. There is a certain level of comfort and computer literacy that a Linux user should have before taking the plunge. If someone has the right aptitude, he or she can jump in from almost anywhere—if not, it doesn't seem to ever happen. How can someone tell if he or she has the right stuff for Linux? What are the skills that a Linux newbie should possess?

2. There are certain uses that are ideal for Linux machines. The available software is every bit as good as that of any commercial operating systems. What are those computer uses where Linux should be a first choice? Obviously, virtually everything that you can do on any other computer can be done on a Linux system; however, which of those uses is the Linux advantage, whether economic or technical, so great that only Linux systems should be considered?

3. There are niches in computing that are overlooked by the commercial operating systems. Over time, only the Linux/Unix-like community has developed applications that work effectively. What are those unique applications?

E-mail your ideas to Linux Update Issue (*ceeditor@computoredge.com*).

What Day Is It?

We are working at the Linux command prompt and we want to see a calendar. It couldn't be simpler. Just type "cal":

```
$ cal
      May 2009
Su Mo Tu We Th Fr Sa
                1  2
 3  4  5  6  7  8  9
10 11 12 13 14 15 16
17 18 19 20 21 22 23
24 25 26 27 28 29 30
31
```

What about next month:

```
$ cal june 2009
     June 2009
Su Mo Tu We Th Fr Sa
    1  2  3  4  5  6
 7  8  9 10 11 12 13
14 15 16 17 18 19 20
21 22 23 24 25 26 27
28 29 30
```

Let's look at the entire year"

```
$ cal 2009
                           2009
      January                 February                 March
Su Mo Tu We Th Fr Sa   Su Mo Tu We Th Fr Sa   Su Mo Tu We Th Fr Sa
             1  2  3     1  2  3  4  5  6  7     1  2  3  4  5  6  7
 4  5  6  7  8  9 10     8  9 10 11 12 13 14     8  9 10 11 12 13 14
11 12 13 14 15 16 17    15 16 17 18 19 20 21    15 16 17 18 19 20 21
18 19 20 21 22 23 24    22 23 24 25 26 27 28    22 23 24 25 26 27 28
25 26 27 28 29 30 31                            29 30 31

       April                    May                     June
Su Mo Tu We Th Fr Sa   Su Mo Tu We Th Fr Sa   Su Mo Tu We Th Fr Sa
          1  2  3  4                    1  2        1  2  3  4  5  6
 5  6  7  8  9 10 11     3  4  5  6  7  8  9     7  8  9 10 11 12 13
12 13 14 15 16 17 18    10 11 12 13 14 15 16    14 15 16 17 18 19 20
19 20 21 22 23 24 25    17 18 19 20 21 22 23    21 22 23 24 25 26 27
26 27 28 29 30          24 25 26 27 28 29 30    28 29 30
                        31
        July                   August                 September
Su Mo Tu We Th Fr Sa   Su Mo Tu We Th Fr Sa   Su Mo Tu We Th Fr Sa
          1  2  3  4                       1        1  2  3  4  5
 5  6  7  8  9 10 11     2  3  4  5  6  7  8     6  7  8  9 10 11 12
12 13 14 15 16 17 18     9 10 11 12 13 14 15    13 14 15 16 17 18 19
```

```
19 20 21 22 23 24 25    16 17 18 19 20 21 22    20 21 22 23 24 25 26
26 27 28 29 30 31       23 24 25 26 27 28 29    27 28 29 30
                        30 31
      October                 November                 December
Su Mo Tu We Th Fr Sa    Su Mo Tu We Th Fr Sa    Su Mo Tu We Th Fr Sa
             1  2  3     1  2  3  4  5  6  7                 1  2  3  4  5
 4  5  6  7  8  9 10     8  9 10 11 12 13 14     6  7  8  9 10 11 12
11 12 13 14 15 16 17    15 16 17 18 19 20 21    13 14 15 16 17 18 19
18 19 20 21 22 23 24    22 23 24 25 26 27 28    20 21 22 23 24 25 26
25 26 27 28 29 30 31    29 30                   27 28 29 30 31
$
```

Type "man cal" for more options.

State of Linux and Unix-Like Systems

On June 12, *ComputorEdge* will be publishing an issue on the current state of Linux. Is it growing? Where does it fit in computing? How is it currently changing the world of computing? Is it only for nerds? How has Linux affected your life personally, if at all?

Quite frankly, we don't know! We need your help to tell us what's happening. Please send us your thoughts, no matter how short or long, concerning the state of the Linux community. Just e-mail your ideas to Linux Update Issue (*ceeditor@computoredge.com*). Be sure to put the words "Linux Update Issue" in the subject line. We will organize the ideas and publish them in a feature article on June 12. If you have strong opinions, or know and care about the direction of alternative operating systems, then we want to hear from you.

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 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.

Jack Dunning
ComputorEdge

Rob, The ComputorTutor Does Visual Basic for Applications

"More Debugging" by Rob Spahitz

> Last week, we continued looking at using VBA to capture errors. This week, we wrap up that discussion so we can complete our Mailing List project.

Last week, we continued looking at using VBA to capture errors. This week, we wrap up that discussion so we can complete our Mailing List project.

As usual, to retrieve a recent version of this database, check out *www.dogopoly.com/ce*.

Debugging

As we left it last week, I mentioned the three main tools that VB offers to help you isolate computer code that is not working as expected: breakpoints, code stepping and expression watches. The error-trapping we explored can help you to identify the section of code that found the problem, but sometimes you just need more.

Unless your procedure has only a few lines of code, trying to find out why it's not working can be challenging. Deductive reasoning can take you only so far. These other tools offer different ways to attack the problem. So let's explore the ins and outs of each.

Breakpoints

What is a breakpoint? It a point at which you'd like to break into your computer code to see what's happening. The concept behind this is that you think you know about where the problem is occurring, but you're not sure of the exact point. So you pick an arbitrary location near where the problem is and let the computer run your program (and subroutines) at full speed until it hits the spot where the code stops and waits for further instructions.

When setting one or more breakpoints, you are basically asking the computer to do most of the work until it gets close to some code you'd like to examine. In some cases, you simply want to see if the code ever gets processed; in other cases, you want to see how it got there (using some other tools); still other times you just want it to get to the line that you think is causing a problem so you can check the status of things.

You set a breakpoint by going to the grayish bar to the left edge of your VB code. When you click there, you get a sort of red traffic light (and the line gets highlighted in that same color) to indicate that it will stop there if the code runs through that procedure. Another way is to right-click on the line where you'd like to add a breakpoint and select that from the menu's Toggle, Breakpoint item, as seen in Figure 1.
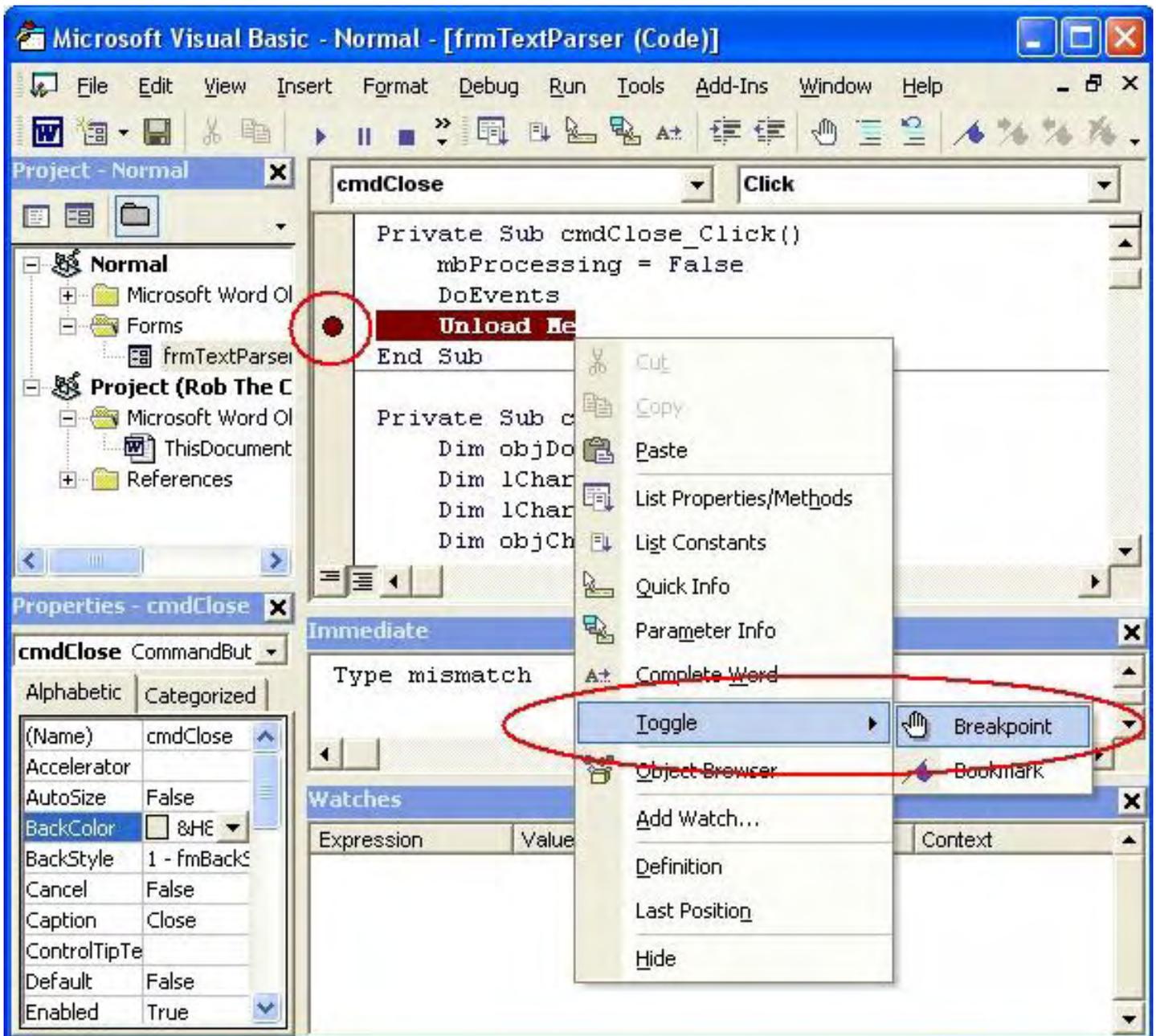
Figure 1. Setting a VB breakpoint.

You can also use menu Debug, Toggle Breakpoint or press the F9 key to turn on a breakpoint. If you select any of these options again while the cursor is on that line, it will remove the breakpoint. Also, if you shut down the application (Access), your breakpoint is not saved. (This will change in a future version of VB).

Note that not every line can have a breakpoint. Typically these apply only to "executable" lines, i.e., lines that get processed at runtime. So you can't set one on a blank line or one with a "Dim" statement, but you *can* set it on the "Sub" or "Function" line.

To demonstrate this, pick any Access form, add a button, add an Event Procedure in the Event tab of the Properties window, and set a breakpoint on the first line (probably Private Sub Button1_Click()). When you run the form, you simply get the form. If you close the form, you're returned to the Access development area. You never get into VB because the line with the breakpoint never got processed. That makes sense, since the breakpoint occurs only when you run the code for Button1_Click, which happens

when you click on the button.

Run again and click on the button. Notice how you are almost immediately shifted from Access into VB. The line with the breakpoint will still be there, but you'll also get a yellow arrow and yellow highlighted text, as seen in Figure 2, showing you that it has stopped on the line and is waiting for further instructions.
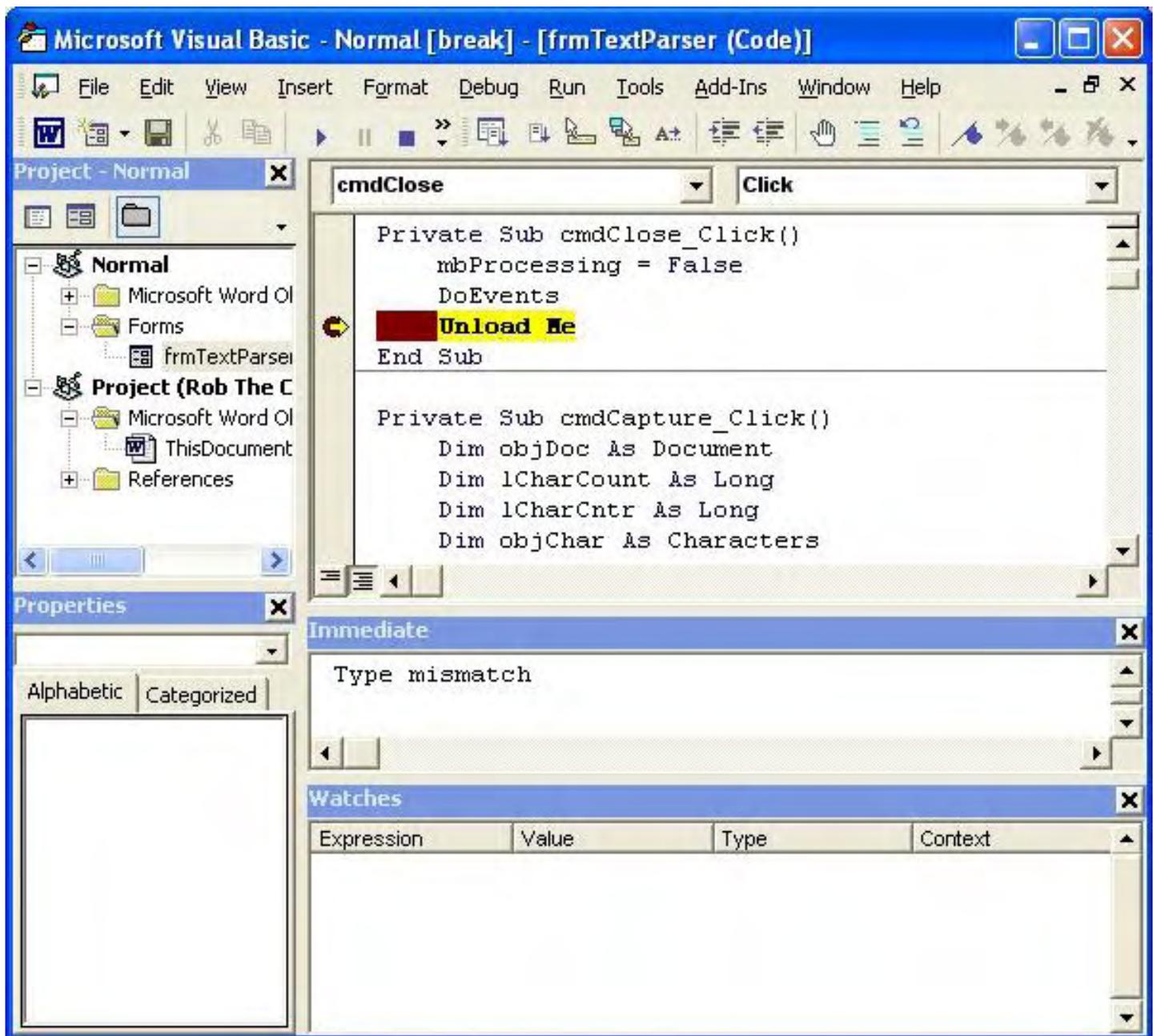

Figure 2. VB stopping on a breakpoint.

For now, simply press the F5 key to continue. This tells it to continue running from where it left off.

Breakpoints are a lifesaver as you write more sophisticated code, since it's often difficult to tell what part of the code is causing problems (especially if someone else wrote it and you have to work on it). By setting multiple breakpoints at key routines, you can quickly narrow down where the problem is occurring, then remove that breakpoint and put some deeper into the code as you narrow down the location where the problem exists, while not interrupting the code in areas that are not a problem.

This feature is really nice, but all it does is get you into the area where the problem occurs. Without being able to see what the computer sees, you may still be guessing what the problem is and where it occurs. So read on.

Code Stepping

Code stepping is like on-the-fly breakpoints. When you get to an area you'd like to explore (probably after getting there from a breakpoint), you can ask the computer to start processing one line at a time. If you see something happen that wasn't expected, like not updating a value or repeating something that you thought happens only once, you may have solved the problem.

Code stepping comes in a few varieties. The basic one is Step Into (the item in the Debug menu or the F8 key) because it will let the VB continue on to the next line of code that it has access to run. In most cases, it goes on to the next line below where it was. However, with a condition, loop or subroutine, it may jump to a different part of the same code or an entirely different procedure.

To try Step Into, click on that button from the example above. When you get the yellow line, press the F8 key to step into that line. Since that line simply sets up the subroutine, it proceeds to the next line ("End Sub"). If you step again, it appears that nothing happens. What happened is that your computer code finished, so VB passed control back to the Access form, so the form is waiting again.

The next choice, Step Over (the item in the Debug menu, or Shift-F8), is for processing a subroutine without jumping into it. This command lets you run a subroutine without stepping over each line. This is useful if you have a subroutine that you think is working fine and don't want to step through each line of code in that subroutine.

The last choice, Step Out (the item in the Debug menu, or Ctrl-Shift-F8), is for jumping out of a subroutine after you've stepped into it and would like to quickly get back to the line that let you jump into the subroutine. This is good if you accidentally stepped into a subroutine that you didn't want to review, or if you've examined enough of that subroutine and are ready to get back to where you were and continue stepping.

We'll explore these more when we move on to VB.Net programming and start adding subroutines.

Expression Watches

As you start debugging computer code, you will eventually need to see what values are stored in various places. For example, if you have a database field that is used in a calculation, and the calculation is failing (wrong result, value overflow, non-numeric data, etc.), then you might need to know what the value is so that you can determine not only what is wrong, but maybe also get an understanding as to why the problem occurred.

Suppose that you are adding 1 to the value of a field, and you find out that the field contains the letter "a." What does that mean? Well, with some experience, you can look at some ideas. For one thing, you may have used the wrong field. Another possibility is that an input routine is not working correctly. Another is that a conversion routine is not properly managing the data. Another is that you're not supposed to be adding anything at all!

So how do you know the cause if all you get is some message like "Type Mismatch"? It's very difficult

because you may not have a context for this data. It's possible that this calculation is within a loop, reading 1,000 database records and processing them, and then one of those many records is failing. Trying to find that one record can be very time-consuming if you don't really know more details.

To help out, VB offers you several ways to check values while the program runs. This includes things called watches.

The Quick Watch is a way to get the value of a calculation at run-time, when at a breakpoint or while stepping through code. For example, if you have the variable "iCounter" somewhere in code with a current value of 1 and you choose menu Debug/Quick Watch (or Shift-F9), you see a window showing that value, as seen in Figure 3.
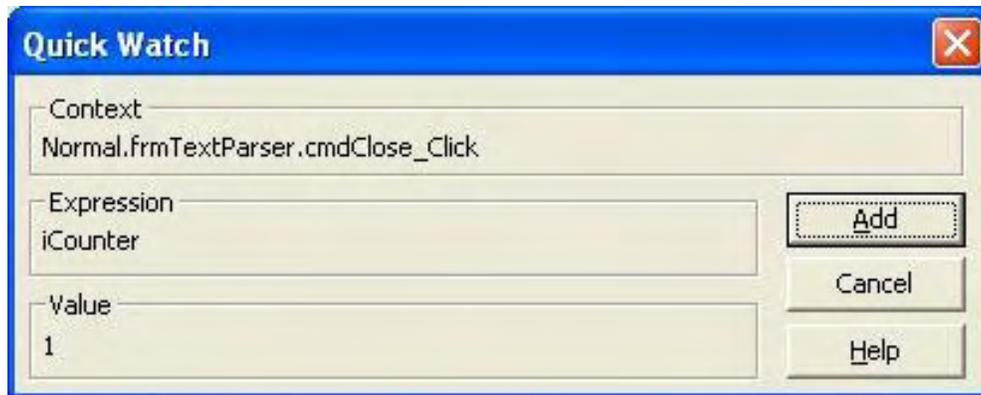

Figure 3. Quick Watch window.

The window shows the context of the calculation (in the above case, Normal.frmTextParser. cmdClose_Click, since I set that up in a Word document's VB; the VBA there is the same as the one in Access). Next you see the expression, which can be a value, a variable, an object, a database field, a function, or any calculation that combines these. Finally, it shows the current value at the time that you checked. In addition, you can "Add" this to a list of things to watch every time you step through the code (if available).

The nice thing about Quick Watch is that you cannot only use things related to your database, but you can also use it as a quick calculator, if you like. After seeing the value, you will probably know if the result is correct or something you didn't expect.

This is nice, but if you have to check a calculation over and over (especially if it changes while you are stepping through the code), you may want to save this watch. To do that, you want to either click the Add button or use menu Debug/Add Watch, which will present you with something like Figure 4.
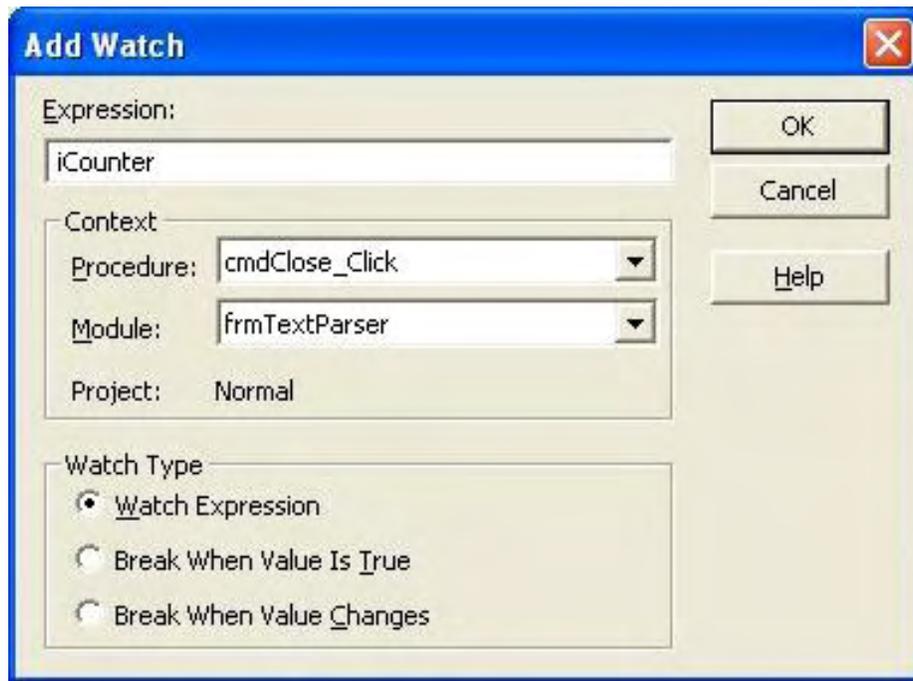
Figure 4. Add Watch window.

When using this, you can define an expression to show every time you step or hit a breakpoint, but you can also create a condition (as seen at the bottom of the window) that will cause the code to stop for you. This can be useful if, for example, you know that the code works fine for the first 98 records that it processes, then something goes wrong. Rather than step through the code over and over again, 98 times or more, you simply let the code run and let the "watch" let you know when your condition occurs, at which point you can do further investigation with the right record.

If you add a watch, you will also get a window showing up near the bottom of the VB window, similar to Figure 5.
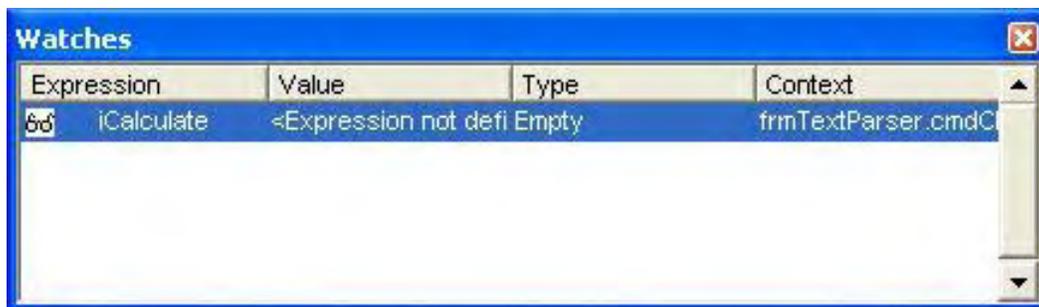

Figure 5. Watch window.

Next, you get Edit Watch, which lets you change any of the added watches in the same window as the Add Watch window. To remove a watch, you can use the Edit Watch window's Delete button or right-click in the Watches window (Figure 5) and select Delete Watch.

Debug Object

One other tool of note to help with debugging is the Debug object. As with the Err object and the MsgBox object, this is immediately available for use in your VB code. Its purpose is to allow you to display the value of various things while running your code, without affecting the way the code runs. Although there

are two parts, at this point, just look at the Debug.Print feature. This is similar to the Watch in that you can show any calculation (including arbitrary calculations like 16+7), but instead of showing up only when you step, it shows up in a separate Immediate window (Ctrl-G to show this) whenever it has an opportunity to show it. Also, this value is retained in the window even after the program stops running.

Wrap-up

All of these debugging tools, breakpoints, stepping, watches and the Debug object help you to make better code by giving you a mechanism for reviewing code in various stages. By isolating problem areas and using these tools, you can rather quickly fix problems in your code and, when combined with error-trapping, make it more stable and trustworthy.

Next week, we return to our Mailing List database on our journey to create a nice application that we can all use to help us work with the data in our computer.

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.

EdgeWord: Computer Hygiene

"Good habits to help you avoid disaster." by Jack Dunning

As with any virus, good hygiene will help prevent the vast majority of those diseases circulating from infesting your computer.

As pointed out by Wally in his Apple column this week, the term "computer virus" has come to mean anything that infects your computer. (Wally's column is worth reviewing for his insights into malware, even if you're not an Apple user.) As with any virus, good hygiene will help prevent the vast majority of those diseases circulating from infesting your computer. Coupled with standard tools, a cautious temperament will keep your computer safe. If done properly, good computer hygiene will turn your antivirus protection software into merely an underutilized backup defense.

"Wilber takes his computer anti-virus protection seriously."

The vast majority of malware problems come in the form of files that get loaded onto your computer when the user makes a mistake. As long as you allow your software to warn you when you may be doing something dangerous, you should be able to avoid accidentally accepting the malicious programs and files onto your computer. You want to develop good habits that will help you to avoid temptation.

1. Never download anything from a site that you don't know.

One of the main methods that we use to get new software is by downloading from the Internet. That procedure automatically introduces the possibility that we could be getting something from a nefarious source. Know your trusted sites. The better downloading sites, such as CNET's Download.com, test their downloads for safety. Even if you find a link at another random site for software that you want to test, go to the reputable sites to locate and download. The vast majority of what is offered on the Web is safe, but it takes only one mistake to infect your computer.

The corollary to this is never install any program that has an unknown origin. Usually, if you have downloaded a file, it won't do anything unless you double-click, or "run," the installation file itself. If you know you got it from the right source, no problem. Otherwise, look for a better source.

A couple of the most common downloads that you will encounter on the Web are Adobe Reader (for PDF files) and Adobe Flash (for Web videos and animations). Many sites will require one or the other for you to take full advantage of their site. If a site detects that you don't have the software installed (or it's not the latest version), you will receive a warning and possibly a link to download the latest version. Rather than clicking the link, which could be disguising malware (although it's probably totally legitimate), go directly

to the Adobe site, or a download site such as CNET. This positive action will help prevent you from being lulled into making a mistake.

2. Do not disable the protection features in your programs.

Browsers, e-mail client software and other programs usually have safety features included that will warn you when you are about to download a file, run an Active X applet, display a pop-up window, or open a questionable page. Don't disable these features, even if they occasionally annoy you.

For example, my e-mail program is set to block the display of graphics that are linked in e-mail. While it is unlikely that a virus will come via such a link, the e-mail programs must go out on the Web and download the image. In the process, the Web site could conceivably capture your IP address. Plus, graphics are commonly used by spammers to fool spam filters. The weekly *ComputorEdge* HTLM e-mail includes one such graphic in each issue (although we don't try to capture IPs). If you want to see the graphic, a click of a button will download it. Only allow the graphic if you know and trust the sender of the e-mail.

It is not that your computer is likely to get infected by an e-mail graphics link—it's not likely at all. It is the cautious habit taken toward using the various protection features that's important. This applies to Web browser pop-up blockers, as well. Allow the warnings to do their job. When I hit a site where there are multiple pop-ups (or even one pop-up) being blocked by my browser, I immediate leave, looking for less annoying (and probably more legitimate) sites.

3. Don't open e-mail documents you don't expect to receive, even from people you know.

Some malware spreads itself by infecting one person's computer, then sends a copy of itself to everyone in that first person's address book. The e-mail will look legitimate and tempt you to take a peek at the attachment(s). Don't do it. Contact the supposed sender to verify that they actually sent you the e-mail and have them tell you what you should expect. If it's legitimate, this will inform the sender that you don't open just anything.

If I'm sending unexpected attachments to a friend, I try to include a personal comment in the text of the e-mail that will secretly say I am who I say I am, such as the name of their dog, or an event from our last meeting. It needs to be specific enough that it would never be in a malicious e-mail.

4. If you're not sure, vote "No!"

Just as when you go to the polls to vote on state propositions, if you're not sure what it is going to do, say no. That way, at least, you know that things won't be worse than they are right now. With computers the safest course is no action. If you want to protect against viruses, don't go places or touch things that are questionable, whether links in instant messages, e-mail attachments, or Web downloads.

Computer hygiene is attitude as well as behavior. The software that makes you the most vulnerable is that which reaches out over the Internet. That includes Web browsers, e-mail clients, downloading software (i. e., BitTorrents), and instant messages. Whenever you're doing anything that requires Internet access, be alert and maintain a cautious attitude.

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

"Laptop Mouse Pads," "Accessing Favorites on the Desktop," "Was Lou Grant a Prophet?" "MS Word 2007 and PDF Files," "Linux Without Virus Protection"

Laptop Mouse Pads

[This letter is in regard to Digital Dave's April 24 column, where a reader wrote in about frustration with his laptop's mouse pad.]

Some are worse than others—all pretty bad, as far as I'm concerned. I usually put up with them, but also keep a laptop mouse in my kit when I get frustrated enough.

I was a little surprised that no one mentioned the obvious: If you're going to disable the pad, you better have a mouse handy.

-Bob Di Giorgio, San Diego

Accessing Favorites on the Desktop

[These letters are in response to Digital Dave's May 8 column, where a reader wrote in wondering if he could access his Web Favorites list from the desktop.]

In response to your reader who wanted to know if there was a way to access Favorites without loading a page, the reader could set the home page to be blank. In Internet Explorer, under Tools/Internet Options, click the "Use Blank" button. In Firefox, it's Tools/Options, and type "about:blank" in the Home Page box. This way, the program opens, but doesn't load a Web page.

Your suggestion of accessing the Favorites folder works only for IE, as Firefox, and probably others, use a "bookmarks.html" file to store bookmarks. As an alternative to the blank home page, the user could set the bookmarks.html file as the home page, but it's not an easy one to find. The path on my computer is: C:/ Documents and Settings/[user name]/Application Data/Mozilla/Firefox/Profiles/[random].default/ bookmarks.html. The Application Data folder is hidden.

-Anonymous

Actually, in Windows Vista, the Favorites folder will work with Firefox as long as Firefox is your default program for Web browsing. A problem I've noted is an error message that pops up if Firefox is not already open:

"Windows cannot find '<URL or path to file>'. Make sure you typed the name correctly, and then try again. To search for a file, click the Start button, and then click Search."

In spite of the error, Firefox continues to load normally with the selected favorite page being displayed.

There is a fix for the error message problem at the Mozilla Site (kb.mozillazine.org/ Windows_error_opening_Internet_shortcut_or_local_HTML_file_-_Firefox), but it requires editing the Registry in Vista.

The other issue is that Bookmarks created in Firefox do not automatically get included in the Favorites folder. You can add them to Favorites by dragging the Bookmarks from the Firefox Bookmarks Manager directly into the Favorites folder.

-Digital Dave

Important Update to the Original Answer:

I overlooked another way to quickly access Favorites in Windows: By adding it to the Microsoft Start menu (duh!). Right-click on the Start Menu icon and select Properties. Click "Customize..." next to the "Start menu" selection in the Start Menu tab. Check the "Favorites menu" box, click OK, then Apply and OK in the first window. This will add the entire Favorites list as an option in the Start menu. My bad!

- Digital Dave

Was Lou Grant a Prophet?

[This letter is in regard to Jack Dunning's April 17 EdgeWord column, where Jack discussed declining newspaper readership.]

The article and comments reminded me of a long-ago TV program, "Lou Grant," with Ed Asner as a newspaper editor. The program opening showed a series of clips of typical newspaper publishing—the reporter, the editor, the printer, loading the papers on the trucks, and finally the papers landing on porches. One time I caught it with an added clip, of the housewife picking up the paper and immediately shoving it in the bottom of the bird cage. Seems like Lou Grant was predicting the future.

-Bob Di Giorgio, San Diego

MS Word 2007 and PDF Files

[This letter is in regard to Michael J. Ross' April 17 article, "PDF-Creation Programs."]

I just tried using MS Word to create a PDF file, and it seemed to be OK when opened in Adobe Reader. MS Word also opened the same PDF as a .doc file that could be edited and then saved again as a PDF file. Many folks do have MS Word or Office, so I am surprised why no one mentioned it, or did I miss some critical functionality?

-Dennis M. Reed, Poway, CA

Linux Without Virus Protection

[Regarding the May 8 Little Linux Lessons column:]

I recently read a column by a well-known author saying that with Linux, one never needs to worry about a virus or malware while on the Internet. True?

-Al, Tustin, CA

Al,

No system is completely safe from viruses or infection. While 90-plus percent of the viruses out there are written for and target Windows systems, Mac and Linux are becoming increasingly more popular as targets for viruses, worms and Trojans. About 10 or so years ago, a version of sendmail that was being distributed was infected with a Trojan due to a mirror that was compromised. Anyone who ran an MD5 check on the file would find out that the archive was not right. But many people didn't do that and became infected anyway. And if they installed the program as root, well, the consequences speak for themselves.

-David Eddleman

Malware in Linux? I know of nothing that exists in the wild that affects Ubuntu Linux. I don't really care much about obscure problems that happened 10 years ago. The answer to the question of "do I need anti-virus for Linux?" is . . . not yet.

-Maximo1561, North County

What I gave was one example, an example does not make a rule. There are an increasing number of growing viruses and rootkits, and more that affect Linux and its subsystems. Would you lump a virus that attacks a Word installation (but not Windows itself) as a Windows virus, or a Word virus? There are lots of methods of attack available, from attacking the OS, to its many libraries, components and subsystems. A novice user doesn't realize just how many subsystems there are running to keep an OS functioning. Many Windows and Linux viruses target vulnerabilities in them, like how Blaster and Sasser targeted the lsass module's exploitability.

Working in a hosting company, I've seen a wide variety of systems get hacked into, had a virus dropped in, and more.

-David Eddleman, Vista, CA

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