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Administrative offices are located at 4740 Murphy Canyon Road, Suite 250, San Diego, CA 92123. Send all inquiries, and editorial submissions to P.O. Box 83086, San Diego, CA 92138. Not responsible for unsolicited material.

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Printed in San Marcos, CA.

POSTMASTER: Send address changes to *ComputerEdge*, P.O. Box 83086, San Diego, CA 92138.

COMPUTOREDGE®

SAN DIEGO'S COMPUTER & INTERNET MAGAZINE • WWW.COMPUTOREDGE.COM

May 4, 2007
Volume 25, No. 18

Computer Focus

- 8 **Digital Dave** *by Digital Dave*
- 14 **Personal Backups: Strengths and Pitfalls** *by Stace Johnson*
You did have a backup, right?
- 17 **All It Takes Is One Touch to Back It Up!** *by D'Artagnan Fischer*
Quick and simple one-touch backup solutions.
- 19 **The Linux Link** *by James Hartnett*
Backing Up the Linux Way: Sticking to tar
- 21 **Worldwide News & Product Reviews** *by Charles Carr*

Internet Focus

- 23 **Hot On the Web** *by Jim Trageser*
Grouping Together With the Like-Minded
- 25 **Web Directory**

Departments

- 4 Edgeward
- 6 Editor's Letters
- 16 Sudoku Solution from last week
- 22 Calendar of Events
- 24 Sudoku Puzzle
- 26 User Groups
- 27 Classifieds
- 28 Career Opportunities
- 29 Advertiser Index/Product Index
- 30 Directory of Services

edge **W O R D**

If you're in a traditional business, you can lock the door at closing time and, at least until the following morning at opening time, your business activity is suspended. That's the way it used to be for practically all businesses. Today, with the Internet available 24 hours, business has become a continuous process unregulated by the rising and setting of the sun. Uptime, the uninterrupted operation of Internet servers, has become the number one priority. Downtime has become synonymous with losing money. The problem is that eventually the mechanical and electronic components we find inside our computers break down or burn up. It will happen and probably when you least expect it. Your best bet is to plan for it, and the number one plan is to back up your data.

In the *ComputerEdge* virtual office, the keyword to reliability is redundancy. The more something is repeated, the more likely that it can be recalled when needed. It starts with the hardware.

RAID is an acronym for redundant array of independent drives. If you have critical operations, it is worth the relatively low expense of adding extra hard drives in a RAID configuration. In this configuration, data is written to all drives in the same RAID configuration simultaneously. This is automatic data backup. If one drive goes out, (hard drives are the components most like to fail in a computer), the other(s) continues to operate as if nothing has happened. If the drives are "hot-swappable," then the defective drive can be replaced without ever cutting power to the computer. You don't need RAID on all of your computers, but you should seriously consider it for Web servers, e-mail servers and other 24-hour services.

All three servers in our virtual office have RAID configurations, but I don't consider that enough protection. One of the major causes of data loss is human error—usually mine. RAID will only ensure that you have an accurate copy of all the human error. It is necessary to make regular backups of critical data to independent media. That can be another computer, a tape drive, a zip drive, a secure digital chip that you carry around in your pocket or one of the many backup services proliferating on the Web.

With the enormous low-cost disk space available on today's computer hard drives, it is feasible for a small business to use either a second drive, or the drive on another computer to backup important information. Our remote servers have backup scripts that they run late at night over their internal network, which copy each other's critical data. This is one of the reasons for having multiple servers in our virtual office. If one happens to go down, another can be quickly be made to take over duties. Some scripts will save 30 days of backups allowing return to a specific date, while less critical data may only keep seven days.

If you have a home network, you can do automatic backups between Windows machines by writing batch files that use the COPY command and the Windows scheduler to run the programs each night. If you want a week's worth of backup, give each batch file a different name (i.e. sunday.bat, monday.bat, tuesday.bat, etc.) and schedule each for the corresponding day of the week. (See this column online for more details.)

Of course, if you have no data that's important to you, then you don't need to back up.

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Display advertisements must be received by 5 p.m. the Monday prior to publication. Submissions for Classifieds, Directory of Services, Help Wanted, User Groups, and Web Listings must be received by 4:30 p.m. the Friday prior to publication. *ComputerEdge* reserves the right to reject, edit, or cancel the publication of any listing submitted.

Mailing Address

ComputerEdge Magazine
P.O. Box 83086, San Diego, CA 92138
(858) 573-0315

ComputerEdge® Online
www.computoredge.com

Skype Tip

■ [This letter is in regard to Digital Dave's March 30 tip about turning off Skype when you're not using it in order to speed up your Internet connection.]

I just downloaded and used Skype for the first time. It worked great for a voice hookup, and next I will be trying the video portion. Your tip on "unclogging your Internet pipes" by turning off Skype when it's not in use was very timely for me. Thanks!

Joe S.
Colorado Springs, CO

Global ComputerEdge

■ I live in the middle of nowhere, Montana, but I first met *ComputerEdge* when I was stationed in San Diego. Those of us in the electronics shop waited for (and fought over) the issue to find out

when and where the next computer show/sale was going to be, and read Dave's latest bit of helpful info.

When I retired and moved to Montana, I knew I was going to miss my favorite link to technology. I've been subscribing to CE online for several years now, and even had the pleasure of seeing one of my letters appear in "print."

Keep up the good work, and thanks for going "global."

Maxi Morgan
Ekalaka, MT

More Credit Card Benefits

■ [This letter is in regard to Douglas Zilm's March 30 letter to the editor, in which he pointed out that merchants must pay a fee when customers use credit cards.]

Another thought on why credit cards have been bene-

ficial to small businesses: payment by phone. Before credit cards, the merchant had to wait for a check or money order to arrive. Very few people knew about or would pay for Western Union MoneyGrams. I think you had to go to the Western Union office to get the money.

Now, the customer calls the business, payment is arranged, and the goods or services are on their way almost immediately.

Jim Amos
Denver, CO

Excellent

■ [This letter is in regard to Michael J. Ross' March 30 article, "Blogging's Bad Side."]

What a great piece! I wish I had writing talent like yours. Bravo!

I, too, have a Web log,

but I really use it only as an electronic journal. It is readily available for anyone to peruse, but I don't make it widely known, nor do I actively solicit readers. I am

editor's LETTERS

celetters@computoredge.com

probably one of several million "bloggers" who falls into this category.

I am sure that one of the biggest reasons I receive very few comments is due to the fact that I am a very small blog in a galaxy of minutiae—a virtual speck of writing. However, I can say that my writing is my own. You won't find a single byte of plagiarism on my blog.

Pete
Roy, Utah

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DIGITAL DAVE

*Dear Digital Dave,
After downloading Ubuntu Linux, I burned it onto a CD, but it has an ISO extension and will not install. I also put it on a 4GB flash drive and tried to install it from there, to no avail. Am I missing something?*

Larry

Dear Larry,
I decided to use Ubuntu Linux to write this column to get some experience with it. I'm running off the CD-R that I burned by following the directions on the Ubuntu Web site.

The key to making a

bootable CD is to use the Infra Recorder utility instead of the default Windows CD-R burner. Normally, when you stick a blank CD-R into your drive, it pops up a window that allows you to copy files and then burn the files. If that should happen, cancel out of it.

You have to download and install the Infra Recorder. There is a link on the Ubuntu BurningIso-Howto page (<https://help.ubuntu.com/community/BurningIsoHowto>) to the site where you can download this CD-R burning utility. I assume, from the file name, that the resulting CD-R has some special Linux booting capability that may not be on a disc written by the default Windows burner.

While making your Ubuntu CD, you should download and run the md5sum utility program. This program reads the files you downloaded from Ubuntu and verifies that each and every file is exactly correct. No added virus code and no corrupted files. (There is a link to this utility off the Ubuntu BurningIsoHowto page.)

I'd like to make a few comments about what to expect if you should decide

to experiment with Ubuntu. It's an easy way to learn more about Linux without messing up your Windows installation, because you can run it solely from the CD that you just generated. If you like what you see, you have the option of installing Ubuntu on your hard drive for better performance.

If you place the Ubuntu CD in your drive and then restart your computer, it should boot up Ubuntu instead of Windows. You are running completely from your CD drive, so it's going to take some time to boot up, as CD drives are a lot slower than hard drives.

Ubuntu comes with a number of applications, such as the OpenOffice word processor that I am using to write this answer. It has to be loaded from the CD, so be patient. Many Microsoft applications speed up their startup because they load a core of the software, and then start to run while they finish loading the rest of the application in the background.

OpenOffice takes the traditional road of making you wait until all the files are loaded before you can

get to work. This is similar to the way Adobe products work under Windows, and I find it aggravating.

So, give Linux a try. Ubuntu is a very easy way to get a taste before committing to loading it on your hard drive. Give the OpenOffice apps a go, and do some Web browsing with the Firefox browser.

I, personally, have invested too much money and time into Windows applications to toss the OS aside, but I might load up Linux on my old Windows 98 laptop and get some more experience with it.

Digital Dave

*Dear Digital Dave,
How do you run 16-bit games (such as Wolfenstein 3D and the original Doom series) on a 32-bit Windows XP system?*

Whenever I try, these applications invariably terminate. Is there a way to run my favorite old games on my modern system? Thanks!

Ryan Morgan

Dear Ryan,
This is not really a case of 16-bit verses 32-bit. It's

(continued on page 12)

Digital Dave's Tip

External hard drives have become all the rage for backing up the main hard drive in your computer. Hard drives have become so huge that another hard drive is about the only thing big enough to hold an image backup.

There is a fly in this ointment. Suppose you pick up a virus that eventually triggers and trashes the boot disk of the hard drive in your computer. "Ha, ha, ha," you think, as you just took an image backup yesterday on your new external hard drive.

Well, it was the day before yesterday that you downloaded the file containing the virus, and only now did it

trigger and do its evil work. Well, guess what is on the image that you have on that external drive? Right! Another copy of the virus, ready to trash your hard drive again.

One way to deal with this is to take only the occasional image backup to that external drive, and do incremental backups to CD-R or even to a DVD-R if you change that many files.

The occasional image backups reduce the chance of picking up a virus in your image. Be sure to scan for viruses just before doing the image backup.

If you have a disk crash, after restoring the image you can then scan each CD-R incremental backup for viruses before restoring it to your main hard drive. It might not be foolproof, but it sure increases your odds of survival after your hard drive goes in the weeds. □

DAVE

(continued from page 8)

a problem of how the game interacts with the computer hardware.

Windows has drivers that control the hardware. When you install a fancy new video card, you have to install the software driver that is the bridge from your game software to the actual hardware control registers.

Many of the older games cheated to increase performance with the early video hardware, and bypassed the normal Windows video controls, manipulating the drivers at some very low level. It really worked, and was the reason for the popularity of those games. They allowed a computer with video

hardware not really designed for games to perform very well.

Now that our PCs have matured and have much more powerful video hardware—and layers of complex software interfaces and drivers—the old, lower-level access points have disappeared. When these older games try to pull their tricks and bypass Windows, they get terminated for misbehaving.

I checked the id Software Web site, and Wolfenstein 3D is still listed as an MS-DOS game. There may be some way, such as running the Linux port of Wolfenstein 3D on your modern machine, to make it work. It might be time to move on to some of the newer games with more detail and more

action that run on modern Windows machines.

Digital Dave

*Dear Digital Dave,
I have an HP desktop computer running Windows XP. I heard that it is possible to generate a beep when the Caps Lock button is pressed. How do I do this?*

I tried the keyboard controls in the Control Panel, but failed to find the proper instruction. I believe hearing the sound would be helpful as I go to and from all capitals.

*Cirino G. Scavone,
Las Cruces, NM*

Dear Cirino,
The control for the sound that goes with toggling the Caps Lock on

and off is in the Accessibility applet to aid people with disabilities. It's really useful for all of us, especially with keyboards that have the Caps Lock LED in a not-so-visible spot.

Go to Start/Control Panel/Accessibility Options/Accessibility Options (yes, again), and then the Keyboard tab. Make sure the Use ToggleKeys option is checked.

On my laptop and desktop machines with PS2 keyboards, this works fine. My USB keyboard (even though it is a Microsoft product) won't make these sounds. I'm surprised Microsoft let this slip, as support for disabled folks is a high priority.

Digital Dave □

DIGITAL DAVE de·fines:

Quick and Easy Backups

ARCHIVE: Most people use the terms "archive" and "backup" interchangeably, but they are really very different things. An archive is a collection of files that you want to store together because those files have some relationship. For instance, at the end of the year I copy the files for all my columns into one folder. I have a folder for each year. I then copy all the Digital Dave year folders onto a CD-R, and put it away in a safe place. All the files have names that include the issue number, so I can look up what I wrote on a particular week very quickly. You might create a similar archive for your business files, organized by month. A backup, on the other hand, is used to recover from a disk crash or some massive human mistake that erases files that you need. An archive is a collection of files stored away so you can access them easily. A backup is a collection of files stored away that you hope you never need to access.

eSATA: Old-time hard drives used the ATA interface, which had a wide-ribbon cable with many wires. It was strictly for drives mounted inside the case of the computer. To improve the interface between the motherboard and the drive, SATA, for Serial ATA, was introduced. The connection fed all the bits down a single pair of wires at a much higher data rate. Computerists started using this simplified SATA disk drive interface to exchange drives, say for

backup purposes. Between external drives with USB and Firewire (IEEE 1394) interfaces, the designers of SATA realized that there was a market for a SATA with special features for external drives, and thus was born eSATA, for external SATA. The connector was changed to have better shielding so it could last longer. The cable was improved with more shielding so it could be up to 6 feet long. The interface was made hot-swappable, so drives could be plugged and unplugged without having to shut down the computer. Perfect for backups—and a way to sell lots more hard drives.

IMAGE BACKUP: An image backup is a snapshot of all the files on your hard drive. If you should have a disk crash, you could copy the image backup onto your hard drive and be right back where you were when you took the image backup. Of course, any files created or any changes made after the image would be lost. One problem with image backups is that you need a backup medium that can hold the entire contents of your hard drive. That's getting to be a pretty tall order these days, with high-end machines sporting multi-hundred-gigabyte hard drives. Another problem is that copying all that data just plain takes a long time.

INCREMENTAL BACKUP: There is an alternative way to save your hard drive contents, and it's called an incremental backup. This is the method most backup programs use. You need one image backup to create a base-

line. After this, your backup program just records the files that have been changed. If you experience a disk crash, you have to copy the image back to your hard drive to reestablish the baseline, then apply each of the incremental backups in the proper order. This sounds like a complete hassle, but the software automates most of it. Hopefully, you have to restore from a disk crash only on very rare occasions, so the time saved by doing incremental backups often more than makes up for the additional time required for the restore.

ONE-TOUCH: OK, so you want to get serious about backing up your hard drive, but the backup software seems so complicated to install and configure. What if you mess up and copy the data *from* the backup disk instead of *to* it? The act of backing up could wipe out your hard drive! The solution many hard drive manufacturers are pushing is an external drive with one-touch backup. The backup software is built into the external hard drive, and there is a big button on the drive case. Once the drive is plugged into your computer, all you have to do is press the one-touch button to initiate a backup. Now, when you get up to go to lunch, all you have to do is remember to press the one-touch backup button, and your backup drive will be updated with all the new and changed files from your main hard drive by the time you get back to your desk. □



Personal Backups: Strengths and Pitfalls

By Stace Johnson

Jenny squinted at her computer screen, her brow wrinkled in confusion. She called to her husband, “Ron, did you delete the Word document off the computer desktop?”

“Um, I don’t think so. I did get rid of some of the desktop shortcuts the other day to make things a little easier to see, though. Why, are you missing something?”

Jenny sighed and rolled her eyes. “Oh, not much, just the list for my class reunion. That wasn’t a shortcut on the desktop, it was the actual file, Ron!”

Ron walked into the study, wiping his hands on a dishtowel. “I’m sorry, honey. I’m sure you have a backup, though, right?”

The Importance of Backups

Data is everything, as anyone who has suffered a hard drive crash will tell you. Often, the data contained in a computer’s files has more value to the user than the computer itself, especially when the user has spent many hours compiling or creating that data.

Fortunately, we live in the age of

gadgets, where making backups is quicker and easier than ever before. With almost all computers now shipping with standard network connections, CD burners, and easily accessible USB ports, we have many options for keeping valuable data safe.

Quick and Easy: USB Keys

Perhaps the most popular backup option currently available is the ubiquitous Universal Serial Bus key. Driven by popular memory manufacturers like PNY and Lexar, the market for USB keys (also called thumb drives or flash drives) has exploded in the last couple of years. Prices have dropped quickly, and storage capacity has gone up, making the USB key a perfect choice for quick backups of important data. USB keys with 1 gigabyte of storage space are commonly available for less than \$20, and their small size makes them ultra portable.

Unfortunately, one of the USB key’s greatest assets—its size—is also a significant liability. Many USB keys come with flimsy ring

attachments, prompting people to attach them to key rings, belt loops, or badge pulls. During a day of normal activity, it is easy for a USB key to become detached and lost, taking the user’s important (and sometimes confidential) data with it.

That leads to another concern about USB keys: security. If someone should happen to find a lost USB key, there is usually nothing to prevent them from opening any of the files on the key. Hopefully, the key’s new owner will simply format the key and remove all personal data before using it, but there is no guarantee that will happen.

There are solutions to these problems, though. Rather than keeping a USB key on a key ring or belt loop, where it is easily lost or damaged, some people keep their memory key on a lanyard around their neck and under their shirt. In addition to keeping the key out of harm’s way, this also allows the wearer easy access and creates peace of mind, particularly for very sensitive data.

In cases where the data on a key is

(continued on page 16)

Pitfalls

(continued from page 14)

extremely sensitive, it might be a good idea to choose a memory key with a fingerprint reader, so that only specific individuals have access to the key's data. This is the most secure option for USB keys, but it can also increase the product's price by five times or more.

NAS: The Home Network Alternative

Network Attached Storage (NAS) is quickly becoming a viable alternative for backups in networked homes. Though not as inexpensive or portable as USB keys, NAS devices offer significantly more storage capacity and security for home networks.

NAS was originally developed as a technology for use in enterprise environments, where additional storage needed to be added to the network quickly and seamlessly. As with many technology developments, it wasn't long before NAS found its way into home networking, with easy installation software for setting up automatic business-style backup rotations.

One example of an excellent home NAS backup solution is the

Maxtor Shared Storage Plus 200GB drive (www.seagate.com/maxtor), which can be purchased new for less than \$200.

CD/DVD Backups: Best for a Budget

If your computer already has a CD burner, perhaps the least expensive option for backing up valuable data is the venerable CD. These days, the 700MB of data storage provided by a CD is dwarfed by memory keys and DVDs, but it is

“For some people, however, the low cost of CD or DVD backups is offset by the time it takes to copy the data to the disc.”

still a good backup option if you are on a budget. The average cost of CDs has dropped to as little as 25 cents each when purchased in bulk, and they can often be found for less at major retailers. When viewed as an insurance policy, spending a quarter to back up all your critical Microsoft Word files is money well spent.

DVDs offer nearly seven times the storage space of CDs, and can commonly be purchased for 40 cents each, or less in bulk. If your comput-

er has a DVD-RW drive, DVDs are an excellent backup option.

For some people, however, the low cost of CD or DVD backups is offset by the time it takes to copy the data to the disc. Of the three backup methods we have covered in this article, burning a backup disk is probably the least convenient alternative due to the time involved in backing up a full CD or DVD's worth of information.

Meanwhile, Back in the Study

Jenny leaned down and picked up her purse from the floor, pulling from it the USB key Ron had given her for Christmas.

“I think I did put it on here, now that you mention it.” She opened the drive and clicked a column heading to sort the files by name. “Yep, sure enough, there it is! I'm glad you remembered that, Ron. Thank you.”

“You're welcome, honey,” Ron said. “I'm glad to see that you're getting some use out of it. And I'll be more careful in the future when I'm getting rid of icons.” □

Stace Johnson is a Colorado writer, musician, and full-time field technician for a major three-letter acronym. Information about Stace and his writing is available on his Web site (www.lytspeed.com).

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All It Takes Is One Touch to Back It Up!

By D'Artagnan Fischer

Most of us have at least heard about backing up our PC's hard disks. Unfortunately, although almost everyone is aware of the concept, many of us don't actually perform the backups! In some cases, this may be due to cost, but often it simply boils down to issues of convenience: It's just too much hassle. If backing up is too difficult or time-consuming, we just won't do it.

Here's a look at some backup options, with particular attention paid to the easiest methods of backing up: the one-touch backup.

A Necessary Task

So, why do we need to do backups? Well, what would you do if you couldn't replace all of your important documents, or lost all of the family photos that you spent so much time saving to your hard disk? Most of us would be panic-stricken if we ever lost our precious documents or pictures. Remember, mechanical things fail, and at the heart of where our data is stored is a mechanical thing we call a hard disk—and that hard disk is guaranteed not to last forever. And this doesn't even take into account the natural disasters that could destroy a hard disk, such as

fires, hurricanes, and earthquakes.

Hard disk capacities are getting bigger and bigger. It follows, then, that the more space we have, the more we tend to fill up. Of course, programs and operating systems continue to get larger, so they, too, do their part to fill up our hard disks.

In the past, you would normally use a tape drive to back up your data, but hard disk capacities have

"Simply adding an external hard disk to your computer is not sufficient to back up your data."

increased beyond the capacities of normal tape drives. While tape drives do continue to get better, the drives that would serve our growing hard disk needs are usually very big—and very expensive. Unfortunately, most of us don't have a bottomless wallet, so the big, fancy tape drives are not an option.

Backup Options

Never fear! There really are a lot of things you can do to back up your data, and you don't have to spend a

fortune doing it, either!

If you happen to have a CD or DVD burner, you can simply back up your important files to those types of discs. Unfortunately, the process of burning these backup discs can be slow, and it might require several discs each time you perform a backup (depending on how much data you have to back up, and whether you use CDs or DVDs). On the positive side, this type of backup is destined to last the longest into the future, and is not subject to any sort of mechanical failure.

If you have only a tiny bit of data worth backing up, you might even consider something like a Zip drive, or a USB memory drive. Both are relatively simple to use, but the capacity is normally very limited, and I've seen enough failures over time that I recommend that they be used only as a secondary backup, and not a primary one that you depend upon. I hate to say it, but I've seen USB memory drives get trashed by nothing more than getting pulled out of the computer while a file was being written to it.

Simply adding an external hard disk to your computer is not sufficient to back up your data. However, if you really know your stuff—and really know your backup software—you can be very creative in how you back up your data. Unfortunately, a lot of us just don't have the will, or the time, to sit down and get that nitty-gritty with our backup systems.

(continued on page 18)

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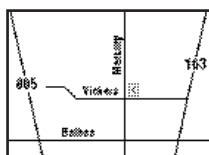
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Touch

(continued from page 17)

One Touch Does It All

Enter the one-touch hard drives. These normally consist of an external hard disk that has been matched up with user-friendly software, which brings the entire backup process down to the press of a single button! Think about it: If all you had to do to back up your data was simply press a button, wouldn't you do it? Keep it simple and easy, and people will use it!

Although the product is easy to use, there is usually some initial setup to be done. However, the software is continuing to improve, and as it improves, that setup process is becoming more and more simple. You may need to select a directory where the backup will find your files, or you might simply opt to have your entire hard disk backed up. Some backup software even allows for timed backups, so you won't even

have to press a button!

Most of the major hard disk manufacturers offer some form of one-touch hard disk backup. Brand is hardly an issue, because they're functionally the same. However, there are some things to consider.

First, the computer interface: USB models are the most common, but similar FireWire/1394 drives will run slightly more efficiently. There are

“Most of the major hard disk manufacturers offer some form of one-touch hard disk backup.”

also eSATA drives hitting the market now, and although they offer the best performance yet, most computers don't come standard with this type of interface. Make sure that you know which one you can use.

Second, the size: If you want to back up your entire hard drive, or

think that you might in the future, then you'll want to buy a one-touch drive that is as big, or larger, than your current hard disk. Currently, these disks come in sizes that match, and even exceed, standard hard disks.

Finally, test it (once configured). Any backup system should be tested. You need to see that everything is working properly, and you have to make sure that you can retrieve files from your backup system in the event that you need to. The worst thing that can happen is to need to recover files, and find that your backup system was never actually working properly.

* * *

We all have files and data, and it would crush us to lose this information. Performing regular backups can prevent any such loss. Unfortunately, if the backup is tedious and time-consuming, it probably won't get done. However, with the use of a one-touch backup system, peace of mind is just a button press away! □

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The Linux Link



Backing Up the Linux Way: Sticking to tar

By James Hartnett

It's one of the oldest pieces of computer lore, handed down from the stone age of electronic computing: Always back up your files!

Sometimes the old ways are the best ways, and on my very first day of computing (all the way back in the last millennium), I heard a horror story that demonstrated the importance of backups.

Back at the Dawn of Time

I was starting work for a pair of atmospheric scientists who had something very rare: their own computer. It was a small computer (only about the size my wife's minivan), and required a room with its own power system, air-conditioning plant, and one of those computer room floors made of sturdy tiles—any one of which could be lifted to access the maze of cables beneath the floor.

It was about as powerful as my current laptop, only without the graphical user interface. For meteorologists, with their giant models of the atmosphere, it was what you might call a personal computer.

On the front were mounted two magnetic tape drives, and one wall of the computer room held row after row of neatly labeled magnetic tapes. These tape drives aren't even built anymore, but they used to decorate the front of every serious computer.

Those computer tape drives looked pretty high tech in the '60s, but they were a lot of work to use. The tape had to be threaded through the heads and onto the take-up reel. As the tape was written, it would be transferred back to the starting reel. Since they didn't hold all that much data (by modern standards), it was common to have data sets spread across multiple tapes.

Oh, the Horror!

My first day in the lab, I saw one of the scientists loading and unloading tapes onto the machine. He was backing up the disks on tape, and he did it every day, though it took almost an hour, and he was always pressed for time.

When I asked why he didn't have one of the lab's students perform this

chore, he told me his tale of woe: A grad student, assigned to the task, had come in early every day to perform the backups. This grad student, seduced by his warm bed one winter morning, had skipped a day, with no untoward consequences, and without even attracting the notice of his late-sleeping co-workers, who assumed the backup had taken place as usual. The exception became the rule, and soon this lazy grad student had not performed a backup for three whole months—a fact that was discovered when the disk crashed, wiping out three months' work for the whole lab.

Now, this scientist was a bit of a forbidding character—not someone I would like to cross. And the steely glint in his eye made me fear for the fate of the poor grad student. He had forgotten the first rule of computing: Always back up your files.

The Modern Era

These days, disks are more reliable. I've never experienced mechanical failure with a modern disk drive, though it does happen, allegedly. The greatest risk to data today seems to be accidental deletion.

Although disks are quite reliable, the same can't always be said for the software engineer. Mistakes will happen, and when data is mistakenly deleted, a good backup discipline can save the day—and maybe your job.

There are many different programs to help back up your data, but

(continued on page 20)

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Linux Link

(continued from page 19)

it's hard to beat the ubiquity and simplicity of the old classic tape-archiving program tar. tar has been with us so long that the tape has vanished from the equation, and most home backups these days seems to be from one disk to another (or even onto one of those newfangled data sticks) rather than to magnetic tape. Yet, tar still gets the job done.

tar Me Up, Scotty

The simple idea behind tar is that you provide it with a directory full of files and subdirectories, and tar will package it all into one file, the "tarfile" (which usually has the extension .tar). The tarfile itself is in a very simple format—one that makes no attempt at compressing the data. For this reason, it is frequently run through a compression program, such as gzip, which produces a much smaller compressed tarfile, the "tarball."

The tarball can be saved to another disk, perhaps on another machine. This ensures that if the original data is deleted or destroyed, the files can be recovered by uncompressing the tarball and then running it through the tar program again, which will unpack the file into its original direc-

tories, with all the contents intact.

There are many different versions of the tar program out there. Linux users have the GNU tar, one of the best. Not only does it meet all the tar standards, but it also includes command-line options to allow the compression to be done on the fly, without having to invoke the gzip utility separately.

Wasting Time

Although the scientist from my story always continued to run his own backups every day, I did manage to

*Listen then,
to the wisdom of
times past. Always
back up your
files!*

save him some time by showing him how to do incremental backups.

Incremental backups address the problem of backing up an unchanged file. Since most files don't change every day, there's no real need to back them up every day. But how can the poor user easily determine which files need to be backed up without making the tragic error of missing an important file?

With GNU tar, the problem is handled for you with the incremental

backup feature. This means that you do a full backup at some reasonable interval, such as weekly, and then an incremental backup each day. The incremental backup will contain only files that have changed since the last full backup. To restore the files, you would first restore the full backup and then the incremental backup. Although this means you need to do more to restore your data, it also means that the daily backup is a lot smaller—and a lot quicker.

Using incremental backups, the scientist was able to use just one tape for his daily backups (except on Mondays, when he did his full backups). This meant less time in the computer room, and more time in front of his computer terminal, programming in Fortran.

More Ancient Wisdom

These days, with so much storage space available, it's not required to have someone come in early each morning and swap tapes around. However, it's still possible to mess up your backup process in some way that might leave you trying to answer some awkward questions to a fire-breathing boss who has just seen valuable data disappear.

Listen then, to the wisdom of times past. Always back up your files! □

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Mac Backfire?

Popular tech columnist Annalee Newitz is apparently no Mac fan—or, at least not a fan of the company’s marketing. “Over the past few months, Apple has launched its own series of attack ads on the Windows PC,” she writes at AlterNet. “You know the ads I mean—the ones where the Macintosh is personified as a snotty, black-clad hipster type who goes around feeling sorry for the PC, a bumbling, nerdy guy in a suit who can never quite get his peripherals to work.

“Unfortunately for Apple,” she contends, “the attack ads have backfired. The PC character is played by John Hodgman, a popular satirist who appears regularly on *The Daily Show* and *This American Life*. His PC comes across as a populist everyman being unfairly taunted by a younger, cuter model with lots of nice hair but no brains. Everybody wants Hodgman in the living room, even if he crashes occasionally. He’s us. He’s America.”

Read Newitz’s entire column at AlterNet (www.alternet.org/columnists/story/49790).

Mac envy or just Mac bashing? Sound off in *ComputerEdge*’s online Readers Forum.


A Sweet Treat for Your Bluetooth

ANYCOM’s BFK-200 Stowaway keyboard (www.anycom.com) is made to work with nearly any wireless Bluetooth 1.2 device you can throw at it: PDAs (such as the Palm TIX I tested it with), smart phones (such as the Treo), and even a tablet, Media Center PC or notebook.

The BFK-200 (about \$100) has an honest-to-goodness, full-sized, four-row keyboard with comfort-

able 18 mm spacing, which folds easily into a tight little package that can be slipped into a briefcase, pocket or purse. It also incorporates a lap-lock device that keeps the keyboard from folding up until you’re ready to pack it in. For travelers, symbols and international characters are supported, as well as user-programmable shortcut and command keys.

Operating systems supported include Windows 98SE, Me, 2000, XP and XP x64; Mac OS X 10.3.9 or later; and GNU/Linux with BlueZ. Drivers are available for the Windows SmartPhone 2003/2005, Windows Mobile 2003/2003SE, Windows Mobile 2005, Symbian UIQ, Symbian S60 (1st & 2nd Gen), and Palm OS.






The BFK-200 uses two AAA batteries for up to 60 hours of typing time and 2,000 hours of sitting-in-your-briefcase standby time. Still, I wouldn’t have minded putting up with a bit more size and weight to be able to use even longer-lasting AA batteries. Finally, it transmits from as far away as 30 feet—perfect for people who can’t stand to read their own writing! 

Kill Mac Viruses Dead

Although Mac OS X is essentially immune from viruses and worms that target Windows and Office for Windows, these attackers nevertheless can reside on a Mac’s hard drive and piggyback on e-mail attachments destined for vulnerable PCs.

To protect your Mac from digital contagions, Intego offers VirusBarrier X4 (www.intego.com/virusbarrier). VB’s signature virtue is non-intrusiveness. Several faceless background components scour through


Product Ratings

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-  What are you waiting for?

your received, downloaded, or saved files. VB interferes with your work only when it finds a suspect. It is so unobtrusive that, during my testing, I had to check the log and Mac OS X’s Activity Monitor utility to make sure antivirus shields really were up.

In addition to its faceless components, VB has a main program for accessing controls and logs, an updater program for downloading new virus definitions, and a menu bar icon for users who shun Mac OS X’s Dock. The main program’s interface is user-friendly, albeit unconventional—an “orb” is the main element, surrounded by odd-shaped buttons that control repair (automatic protection), scan (manual activation), scheduling, etc. I especially like VB’s turbo mode, which “remembers” and skips virus-free unchanged files, thereby boosting VB’s performance.

VB’s price also has components. The program costs \$69.95 for new users and \$44.95 for an upgrade (5- and 10-user packs available); it includes a one-year subscription to virus-definition updates. Subscription renewals set you back \$29.95 for one year, and \$44.90 for two—ouch!

For users running Windows on Intel Macs (just as vulnerable to infection as PCs), VB DP (“Dual Protection”) bundles Bit Defender AntiVirus (v.10) with VB (\$79.95 new user; \$34.95 cross-grade). 

Review contributed by
Barry Fass-Holmes

Calendar of Events

Sunday, May 6

■ **Excel 2003, Intermediate**—A free class sponsored by the San Diego Community College District, Continuing Education. The class will be held from 8 a.m. to 4:30 p.m. in Room 130 at North City Campus, 8401 Aero Drive in Kearny Mesa. Register in class. For more information, call 619-388-1800 or visit www.sdce.edu.

Monday, May 7

■ **Network Administrator Training: Windows Server Update Services (WSUS)**—Part 1 of a four-part free class offered by the San Diego Community College District, Continuing Education. The class runs Monday through Thursday from 5:30 to 10 p.m. in Suite 112 of Crossroads, 3760 Convoy Street in Kearny Mesa. Register in class. For more information, call 619-388-1800 or visit www.sdce.edu.

■ **CIT (Cisco Internet Troubleshooting)**—One week of intensive, hands-on troubleshooting training. This course meets Monday through Friday from 8 a.m. to 5 p.m. Seating is limited. Alternative schedules available. Call 760-871-3100 or visit www.cesdtraining.com. Financing available.

Tuesday, May 8

■ **Digital Movie Making I**—A five-week course offered by Foothills Adult Education Center. Convert and edit your old VHS home movies, then transfer them into digital works. Hands-on filming and editing methods for beginners and intermediate movie makers. The class runs Tuesday evenings from 6 to 9:10 p.m. at 1550 Melody Lane in El Cajon. Cost is \$25. For more information, call Pam Howard 619-401-4122.

Thursday, May 10

■ **Project Management Series: Defining the Project**—A free class sponsored by the San Diego Community College District, Continuing Education. The class runs from 5:30 to 8:30 p.m. in Room 150 of North City Campus, 8401 Aero Drive in Kearny Mesa. Register in class. For more information, call 619-388-1800 or visit www.sdce.edu.

Friday, May 11

■ **Illustrator CS2, Beginning**—Part 1 of a three-part free class offered by the San Diego Community College District, Continuing Education. This free class runs from 5:30 to 9:30 p.m. in Room 140 at North City Campus, 8401 Aero Drive in Kearny Mesa. Register in class. For more information, call 619-388-1800 or visit www.sdce.edu.

MAY

		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		

JUNE

					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

Monday, May 14

■ **IP Telephony Part II**—One week of intensive, hands-on training. This course meets Monday through Friday from 8 a.m. to 5 p.m. Seating is limited. Alternative schedules available. Call 760-871-3100 or visit www.cesdtraining.com. Financing available.

Wednesday, May 16

■ **When Computer Science Married Biology-The Birth of Bioinformatics Technology**—A free seminar offered by Coleman College. This seminar will be held at Coleman College, 8888 Balboa Avenue in Kearny Mesa, and runs from 6 to 8 p.m. For more information, visit www.coleman.edu or call 800-430-2030.

Monday, May 21

■ **IP Addressing & Subnetting**—Learn how to subnet and supernet. This course meets Monday from 8 a.m. to 6 p.m. Lunch provided. Alternative schedules available. Visit www.cesdtraining.com. Financing available.

Tuesday, May 22

■ **ICND (Interconnecting Cisco Network Devices)**—One week of intensive, hands-on lab training with Cisco routers and switches. This course meets Tuesday through Tuesday from 8 a.m. to 5 p.m. Alternative schedules available. Visit www.cesdtraining.com. Financing available.

Monday, May 28

■ **CompTIA A+ Certification Training**—One week of intensive training and review. The course meets Monday through Friday from 8 a.m. to 5 p.m. Alternative schedules available. Call 760-871-3100 or visit www.cesdtraining.com. Financing available.

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All commercial Calendar listings must be paid in advance by check or money order. Enclose listing with payment, if applicable, and mail to Calendar of Events, c/o *ComputerEdge*, P.O. Box 83086, San Diego, CA 92138.

Hot On The Web

Grouping Together With the Like-Minded

By Jim Trageser

One of the more useful tools for community building online has been the concept of a “group.”

Pioneered on an international scale by Yahoo! a few years back, a “group” is a Web site that gathers files, a forums area, and a group e-mail digest—all open only to those who are members.

Tying it all together is the topic of the group—and those are nearly as endless as human imagination.

From *Star Trek* to medical conditions, favorite musical groups to collecting recipes, there are millions of groups on Yahoo! (groups.yahoo.com).

MySpace caught the group bug but quick, and groups are now one of the more popular portions of what is the most popular online destination.

Oddly enough, it all reminds me of the old dial-up bulletin board systems (BBSs)—which had forums, files and e-mail, and where folks of a like mind could hang out together online. (I do hope that one blogger isn’t going to call me a “FidoNet dinosaur” again for bringing up the BBS era.)

Spreading Like Wildfire

Groups are now spreading to all kinds of places you might not expect

to find them—eBay, for instance.

Recently, I received an invite to join an Atari group on eBay’s British site (groups.ebay.co.uk). Not sure how they found me, but it could have been from a bidder’s list off of some old Atari 8-bit games I recently bid on. (Won a couple, lost a couple.)

Out of curiosity, I popped into the U.S. eBay groups index (groups.ebay.com) to see if there were some U.S.-based Atari groups. I found three, including one with almost 200 members. Not huge by Yahoo! or MySpace standards, but still a pretty active, self-sustaining community.

Interestingly, eBay doesn’t limit group topics to things you might buy on eBay. There are groups organized by geography and by interest—alumni, cooking, photography, and

(continued on page 24)

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Hot

(continued from page 23)

stay-at-home parents are among some of the categories listed.

The eBay groups are organized pretty much like Yahoo! or MySpace groups: There's a message area and a group photo album, a list of members, and even a calendar.

Latching Onto Usenet

Google Groups (groups.google.com) found a way to hit the ground running, with tens of thousands of groups already in place: The Google Groups index page includes a Usenet feed. Around since the late '70s, the Usenet was the first online news-group conversation area, predating even the BBS forums.

There is apparently no topic in existence that doesn't have a Usenet group corresponding to it. And if there is, you can easily start your own Usenet group to address that glaring

need. The alt, comp and rec Usenet domains all seem to be present.

Best of all, it's a somewhat family-safe way to get on the Usenet: None of the binary groups—in which you can attach MP3s, video files or photos (typically pornography)—are available here. There are still threads devoted to some rather prurient topics, but at least you don't have to worry about the little ones accidentally finding nasty photos, or having your teens get you sued for having pirated music on the family PC. At least, not from Google Groups.

Still, these newsgroups don't have the functionality of Yahoo!, MySpace or eBay's groups: It's just a simple, text-only news feed: No photo areas or files for download.

Other Online Groups

Microsoft's MSN has a large and active groups community (groups.msn.com). There are thousands of groups built around almost any topic you can think of. (And in a truly use-

ful touch, the MSN groups have an "activity meter" when you're browsing groups so you can see if it's active or dormant before you join.)

Message areas, photo areas—it's a deep, useful environment comparable to MySpace and Yahoo!

Flickr, the photo-hosting service, also has a groups' area (www.flickr.com/groups) And no laughing, but I actually found a group devoted to photos of vintage computers! (And, yes, I joined—stop laughing, Digital Dave!)

The Flickr groups are fairly barebones, mostly devoted to posting photos, but each group also has a discussion area where you can talk about the photos you're posting—techniques, lighting, etc.

YouTube, ICQ and Apple's dot.mac site all have groups, as well. (My daughter has the iMac these days, so I couldn't explore Apple's groups.)

Guess I can finally shut up about the glory of the BBS age! □

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				3				5
6		7			4		9	
	4	5	1			2		3
3	5		7				6	
		4				5		
	9				8		3	1
4		1			9	8	5	
	6		8			9		4
7				2				

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City of San Diego
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www.irs.gov

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www.sdchcc.com

San Diego Regional Chamber of Commerce
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Oceanside Macintosh UG (OMUG)	Oceanside	www.omug.net
San Diego Macintosh UG	San Diego	www.sdmug.org
SDMUG North County SIG	Escondido	760-745-4008

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MAS 90/MAS 200 San Diego Users	San Diego	ronh@dsdinc.com
Platinum for Windows Users	San Diego	bill.obrien@barsaco.com

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PADS UG	Sorrento Valley	Tom@PCBLibraries.com
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Revit User Group of San Diego	Sorrento Valley	rugsd@kelar.com
San Diego SolidWorks UG	San Diego	www.triaxialdesign.com/usergroup
San Diego SURFCAM UG	San Diego	858-271-5400

DTP/GRAPHICS

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CORELDraw UG of San Diego	San Diego	619-749-4040
North County Photoshop UG	Oceanside	ddean@miracosta.edu
San Diego Macromedia UG	San Diego	www.sdmug.com

IBM OR COMPATIBLE

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Fallbrook PC User Group	Fallbrook	www.fpcug.net
Hidden Meadows Computer Club	Escondido	760-749-3999
IBM and Clones UG	North Par	760-789-1942
IBM & Cisco UG	San Diego	858-232-9763
Ramona Computer Club	Ramona	http://tinyurl.com/5peht
Rancho Bernardo Community Computer Club	Rancho Bernardo	858-487-1711
San Diego Computer Society	San Diego	www.sdcs.org
San Diego PC UG	San Diego	http://sdpcug.org
Seniors Computer Group	San Diego	http://home.san.rr.com/scg
South Bay Computer Club	Chula Vista	http://tinyurl.com/2zg5r
South East San Diego CUG	Spring Valley	619-461-1215
Temecula Valley Computer UG	Temecula	http://member.apcug.org/tvcug
Tri-City Computer Club	Oceanside	www.tricitycomputerclub.com
Under the Computer Hood UG (UCHUG)	San Diego	www.uchug.org

INTERNET

ASP Developers' SIG	San	http://asp.sig.webpublishing.com
PHP User Group	San Diego	www.sdphp.net
San Diego Association of Internet Professionals	San Diego	http://sd.association.org
San Diego ColdFusion UG	San Diego	www.sdcfug.org
WebSanDiego.org	San Diego	http://WebSanDiego.org

LINUX/UNIX

Kernel Panic Linux UG	Linda Vista	www.kernel-panic.org
LinuxBaja (Spanish)	Tijuana, BC	http://linuxbaja.org
North Coast Linux UG	Encinitas	www.NorthCoastLUG.org
San Diego BSD UG	San Diego	www.sdbug.org
San Diego Linux UG	San Diego	www.SDLUG.org
San Diego Open Source Software UG	San Diego	www.sdoss.org

NETWORKING

Network Professional Assoc. (NPA)	varies	www.sdnpa.org
San Diego Network Users Assoc.	San Diego	www.sdnua.org
San Diego Small Bus. Server (SBS)	San Diego	www.sandiegosbs.org

NETWORKING, cont.

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San Diego Wireless UG (SDWUG)	San Diego	www.sdwug.org
Windows Networking Solutions UG (WINSUG)	San Marcos	www.winsug.org

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Photoshop UG	San Diego	www.sdphotoshoppers.com
North County Photoshop UG	Oceanside	760-436-9921
San Diego Delphi UG	San Diego	www.sddug.slctnet.com
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San Diego Macromedia User Group (SDMMUG)	San Diego	www.sdmug.net
San Diego .NET Developers Group	San Diego	http://sddotnetdg.org
San Diego .NET User Group	San Diego	www.SanDiegoDotNet.com
San Diego Oracle UG (SDOUG)	Sorrento Mesa	www.sdogug.org
San Diego Outlook UG	San Diego	sdoutlookug@yahoo.com
San Diego Outlook UG (sdoutlookug)	San Diego	http://groups.yahoo.com/group/sdoutlookug
San Diego Perl Mongers	Mira Mesa	http://SanDiego.pm.org
San Diego SAS UG (SANDS)	varies	kirkklafier@cs.com
San Diego SQL Server User Group	San Diego	www.sdsqlog.org
VectorVest UG (Stockheads)	San Diego	www.stockheads.com
Windows User Network	San Diego	www.members.tripod.com/wunsd

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Computer Genealogy Society of SD	San Diego	www.cgssd.org
Cyber Seniors	Vista	hsalisbury@cox.net
Database Interest Group (DIG)	San Diego	http://dig.sig.webpublishing.com
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E-Commerce SIG	San Diego	craigklein@onebox.com
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Information Technology Service Management Forum (ITSMF)	San Diego	619-817-3649
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MAS90 & MAS 200 San Diego Users	San Diego	ronh@dsdinc.com
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San Diego Remedy UG	San Diego	http://www.sdrug.org
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Society of Hispanic Professional Engineers (SHPE)	Varies	http://www.shpesd.org
Southern California NanoTechnology Business User Group	San Diego	www.nanoforums.org
T.A.P.-T.E.N. Research	San Diego/Int'l	http://groups.yahoo.com/group/tapten
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CAREER OPPORTUNITIES

Don't Be Afraid—You Won't Learn Unless You Ask

By Douglas E. Welch

No matter who you are, where you live, or what you do, if you really want to learn something about your work, your ideas, or a particular product, you only have to ask. Of course, asking for feedback can feel embarrassing and even frightening. Still, listening to the counsel and opinion of another is one of the most important ways that we learn to improve our own ideas.

The idea for this column came to me as I was watching a presentation at BarCampLA-3 (barcamp.org), an un-conference here in Los Angeles that runs about every six months. One of the first sessions was Susie from SuperViva.com, a goal-tracking Web site. I was impressed with the site, but I was even more impressed with Susie. She demonstrated the site, and then asked everyone in attendance for their comments, questions and ideas. That takes guts! It also provided her with a wealth of information on what new features people might want, and how to modify the site to better meet the members' needs. Susie clearly thought her site was ready for review and knew she needed input from a wide variety of people, so BarCampLA offered her a great opportunity.

Now, you don't have to go as far as presenting your work in a public forum, at least not yet, but there is a variety of ways to put the power of "asking" behind any of your projects, personal or professional. Start small, and then grow into more public environments and larger groups of people as your project matures.

Move Beyond the Fear

The first step in getting feedback on your ideas or projects is to collect a trusted and smart group of friends. Once you feel you have your idea in some basic form, take the idea to them and ask them what they think. This initial discussion can, and should, alter your original idea, adding features, removing others, and getting you to the next step.

You start with a small group so you can acclimate yourself to the fear that all of us feel when we ask others about our ideas. We worry that others will hate the idea, or even worse, want to change the idea so much that it no longer feels like our own. This fear is real and palpable. It is also the one thing that can keep you from learning and growing, so it must be overcome at all costs. Some of us

can dismiss it through our own willpower. Others, like myself, will have to use tricks or rewards, or otherwise force ourselves beyond the fear. Whatever method you find best, you must move beyond the fear.

After your initial round of feedback, and any tweaks you have made to your idea or project, it is time to implement the first version. This version doesn't have to be complete, but it should offer some clear idea of what you are trying to accomplish. Now it's time to expand your feedback group. From the very beginning, everyone should be enticed to provide feedback on your idea or project. Nothing can replace this hands-on "usability" testing that only the real world can provide.

You will quickly notice issues, and you should work just as quickly to resolve them. Sometimes you might change one feature, only to realize that the initial idea was better. Change it back. Do whatever it takes to meet your user's needs. I can guarantee that you will be learning something important every day.

Refining

Now that you have your idea or project in some basic shape, you repeat the process with an even larger group. This new group will bring different needs, thoughts and experiences to your project and help to refine it even more. Their ideas might contradict the concerns of earlier users, but you might find that this is simply a sign that a feature doesn't work as well for 1,000 people as it did for 100. Again, you tweak and change, add and remove features, and continue refining your ideas.

At this point, you have probably started to communicate your idea to the world at large, but this certainly doesn't mean you stop taking input from those around you. In fact, this process should continue for the life of your product or service. If you don't make a concerted effort to continually receive and act on feedback, you are stunting the growth of your ideas and business. □

Visit Douglas E. Welch at <http://welchwrite.com/career>.

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Repairs

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 Laptops Plus
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ADVERTISER INDEX

ADS Data Recovery Experts	23	Laptops Plus	23
Affordable Duplication Services	27	LaserQuick	19
American Internet Services	9	Mega Comm Technologies	16
CBL Data Recovery Technologies	24	Micro PC Outlet	10-11
Chips and Memory.Com	7	NetSpigot	17
Coleman College	23	One Course Source	24, 27
Complex Drive	32	Online Datalink	6
Computer Depot Warehouse Superstore	5	PC Club	2
Computer Geeks Discount Outlet	18	San Diego Data Recovery/Computers	19
Hi-Tech Computers	17	SDCOM.com/1USRECOVERY.com	13
		Technology Depot	31

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