

MONITOR

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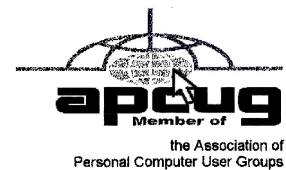
December 2013

Next Meeting
Tuesday, December 10

Everything You Need to Know about Android
with Mark Zinzow

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CD-R and DVD+-R Longevity: How Long Will They Last?

by John Langill

Southern Tier Personal Computing Club, NY

Although there are today many data storage alternatives, I'm sure that there are many such as me who in the past stored various kinds of information on optical media, CD-Rs in particular. To cite just two examples; I have scanned hundreds of family slides, organized the digital images, and saved them on CD-Rs. Similarly, I did the same with several hundred of digital photos from my two-month visit with my son and daughter-in-law in Australia in 2003. The purpose of doing so was to have a convenient form in which archive the digital images and to share them with other members of the family; while at the same time conserving space on the hard-disk – then a more precious commodity than it is today.

Thinking back 10 or more years, one may recall that a single CD-R then offered a relatively

large data storage capacity in a form that could be easily and inexpensively mailed anywhere in the world — something that could not be accomplished via the Internet or with other “portable” media at the time.

While acknowledging that the images stored on these CD-Rs – and others even older – could now be transcribed to another medium, I confess that I’m reluctant to devote the time and effort to doing so at this point. Accordingly, the durability and life-expectancy of the CD-Rs that I created 10, 20, and even 30 years ago, has become an increasing concern.

In the early ‘90s when the first CD-R discs were introduced manufacturers said the media had a data life in excess of 40 years. In the late ‘90s when the first DVD-R discs appeared on the scene producers proclaimed a data life of at least 100 years. However, in the time since their introduction it has been discovered that these early discs are susceptible to media “rot” (i.e., “bit rot”) that can eat your information — audio, video, or data — in as little as two years after it is written. (According to research fairly recently conducted by J. Perdereau, CD-Rs may have an average life expectancy of not more than 10 years — *Journal de 20 Heures, March 2008*.)

Because CD-R and DVD+-R media is used to archive nearly everything today, it does make one worry; especially if these discs are the only repository in which your precious, and irreplaceable, family memories — photos and movies — as well as vital family, personal, and company data/documents are stored.

So where does the truth lie? Somewhere across the complete spectrum.

Most people who successfully burn a disc believe they have quality media. Unfortunately that only tells you the disc will be compatible (able to be played) in the vast majority of CD or DVD players. More importantly all better quality CD and DVD burners include technology called over burn/under burn protection making “coaster production” a thing of the past. The basic construction of both disc technologies enable you to burn your data in a very precise, very controlled manner.

Test Options

There are only two foolproof ways of proving the data life of the discs you use:

1. Write a few CD-Rs or DVD+-Rs, then wait about 25-50 years and check if they still hold the correct data.
2. Use a CD/DVD analyzer that is specially designed to retrieve very accurate information about your media and your data after accelerated aging in test chambers where the discs are subjected to excessive temperature and humidity tests.

The first is typically impractical. Nonetheless, from personal experience I can attest to the fact that the first CD-R I ever burned — selections from a vinyl LP album — plays just fine and the music still sounds great 25 years later. However, I have also had some CD-Rs become unplayable in just a matter of months. Fortunately, such occurrences have been few.

The second provides only theoretical limits and doesn’t take into consideration how you use, handle, and store the media. However, even assuming proper handling, temperature and humidity can adversely affect the data-life of even quality media.

Between the CD-R discs produced in the early 1980s and today’s double-layer DVD+-R discs there has been considerable progress in write performance, capacity, quality, and cost.

Following the test procedures of the International Standards Organization (ISO), quality media manufacturers have been able to predict data-life spans ranging from 50-200 years. But keep in mind there are wide differences between low-budget media manufacturers and quality media manufacturers. In addition variations in manufacturing methods, materials and processes/procedures can dramatically affect the data life of the media you use.

Or as auto manufacturers like to say ... “Your mileage may vary.”

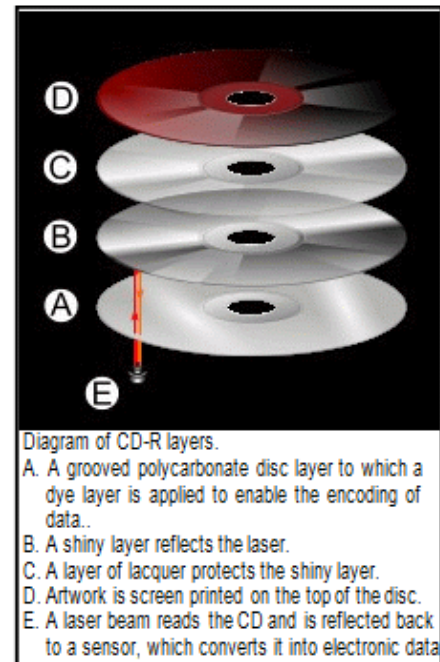
Understanding Your Discs

It isn't vital that you understand the construction of CD-R or DVD+-R media to produce a quality disc that can be read years from now any more than you need to understand the internal combustion engine to drive a car. But understanding the difference between quality and cheap media may help you avoid losing family photos or videos later on.

Most people consider DVD+-R discs little more than overgrown CD-Rs but, while they are similar, they are also quite different. In particular, the grooves are narrower and more closely spaced and the structure (pattern) of "pits" and "lands" is very much smaller with a DVD+-R in order to enable a greater data storage capacity. Precision is very critical.

Writable CD-R and DVD+-R discs start with a piece of polycarbonate substrate into which very precise grooves are molded to guide the tracking of the laser beam. A dye layer is then precisely applied to the substrate followed by a reflective layer and one or more protective layers. A few of the leading media manufacturers have initiated the policy of applying two very resistant layers for added data protection when the discs are used, handled, and stored.

Because of the faster read/write performance users now expect, leading manufacturers have developed new stamper technology for optimum groove (storage area) shape and ultra-precise molding technology. The molding is critical when the media must withstand being rotated at extremely high speeds during the write process — up to 52x for CD-Rs, and 8x to 16x for DVD+-Rs. The engineering margin that was once reserved for manufacturing tolerance has been used for data capacity instead, leaving no tolerance for manufacturing; for these discs to be truly compliant with the Orange Book standard, the manufacturing process must be perfect.



Media Problems

The quality of your media is directly related with the time the media will last without losing information. As you can see there are a number of areas where manufacturers can shave a few cents in the overall cost of the media and areas where production can go amiss to dramatically shorten the data life of your stored information.

There are conflicting claims and consumer beliefs on which media is best for data retention of 30, 50, 100 years — green, gold, or blue



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dye; and gold or silver reflective layer. It is somewhat immaterial today. Manufacturers of quality writable discs have developed significantly improved, more sensitive and more stable dyes, and better reflective materials that virtually eliminate data loss during high-speed read/write processes and enhance long-term reliability.

CD and DVD rot (i.e., bit rot) is not the problem today that it was with earlier LaserDiscs because the media use different dye technologies to store data and make it much less susceptible to that kind of degradation. The truth is that deterioration arising from delamination and oxidation is the greater problem.

Delamination and oxidation usually occur at the outer edge of the disc and are often the result of the adhesive not being properly applied and cured during the production process. This usually happens when price-oriented manufacturers use equipment that is 2 to 3 generations old and the least expensive materials possible.

When it does happen the laser is unable to read the data on the reflected layer. It is usually caused by:

- Oxidation when air comes in contact with the reflective layer
- Galvanic reaction between the layers and coatings
- Chemical reaction caused by impurities in the disc's adhesive or aluminum coating.
- Excessive heat and humidity are known to accelerate and exacerbate delamination and oxidation.

The Real Culprit

If you have purchased quality media from a quality manufacturer, you are still not assured of 50-100 years of data life!

The greatest danger to the data longevity of your personal, family, and business information is you alone; that is, by the way you handle and store your discs. The environment—temperature and humidity — can stress the materials. Gravity also can bend and stress the discs. Fingerprints and smudges can do more damage than scratches.

But by following a few Do's and Don'ts you can ensure your precious family and friend pictures, movies, family records, and business files have the maximum data life.

Do not

- Touch the surface of the disc.
- Bend the disc ... especially when removing it from its case as this can cause a fine crack to develop at the rim of the hub-hole which will render the disk useless. This is a particular problem with DVDs.
- Store discs horizontally for a long time (years).
- Open a recordable optical disc package if you are not ready to record.
- Expose discs to extreme heat or high humidity.
- Expose discs to rapid temperature or humidity changes.
- Expose recordable discs to prolonged sunlight or other sources of UV light.
- Write or mark in the data area of the disc (the shiny side that the laser “reads”).
- Clean in a circular direction around the disc.

Do

- Handle discs by the outer edge or the center hole.
- Use a nonsolvent-based felt-tip permanent marker to mark the label side of the disc.
- Keep dirt or other foreign matter from the disc.
- Store discs upright (book style) in original jewel cases that are specified for CDs and DVDs.
- Return discs to their jewel cases immediately after use. Because the label side is more delicate and susceptible to damage, I recommend storing any CD or DVD disc label-side

down in its jewel case.

- Leave discs in their spindle or jewel case to minimize the effects of environmental changes.
- Remove protective wrap only when you are ready to record data on the disc.
- Store in a cool, dry, dark environment in which the air is clean — relative humidity should be in the range 20%-50% (RH) and temperature should be in the range 4°C-20°C (approx. 40 to 70°F).
- Remove dirt, foreign material, fingerprints, smudges, and liquids by wiping with a clean cotton fabric in a straight line from the center of the disc toward the outer edge.
- Dampen the cloth with a lens cleaner to clean your discs. Dry with photo lens tissue. For tough problems use Windex or a similar glass cleaner, diluted dish detergent, or rubbing alcohol. Rinse and dry thoroughly with a lint-free cloth.
- Check the disc surface BEFORE recording.

Reliable Medium

There is a lot of cheap CD-R and DVD±R media that has marginal quality. For some applications like games, quality isn't critical. For irreplaceable, vital data like family photos, special events, vacations, and family/friends memories quality does matter. If you are backing up mission-critical data on your home or business computer, quality matters. Then it is important to select a brand of media that will keep your data safe, secure and available for years to come.

Quality and low prices just don't seem to mix!

The next step to long-term data reliability is to handle and store the media with the respect your data deserves.

From the August 2013 issue of, Rare Bits, newsletter of the Southern Tier Personal Computing Club, NY. Courtesy of APCUG.

Computer Entertainment

by Jim Cerny

Sarasota PC Users Group, FL

Are you old enough to remember sitting around watching the radio and listening to The Lone Ranger or other programs? Then came TV, movies, records, tapes, and DVDs. We all have our favorite forms of entertainment and entertainers. I am sure most of you have already used your computer, tablet or phone for some kind of entertainment, but I thought it might be helpful (i.e. entertaining?) for you if I gave you a quick overview of the almost infinite entertainment possibilities with computer devices. For the purpose of this article I will assume you have a computer, tablet, or phone connected to the internet. I am sure you will find the following ideas fun and entertaining:

YouTube – one of my favorites. You do not have to join anything or get an ID or password, just go to the You Tube website at youtube.com and in the search box at the top enter in anything you like and hit the “Enter” key. You can enter an actor, TV show, name, event, topic, or news item. Be prepared to get a list of videos you can watch that can take all day. Rarely is an “app” so easy to use and so much fun! To watch a video, just click on it (or touch it on a touch-screen and it should start playing in a few moments. While playing, you can use the controls to pause or drag to any point in the video.

Google Earth – You can download this free through the Google website. (If you don't know how to get to the Google website there is no hope for you at all, please donate your computer today to our refurbishing group.) Google has many tools that are entertaining and fun, but one of my favorites is Google Earth. When it begins you see a slowly spinning earth that you appear to be approaching from outer space. Use your finger on the touch-screen or your mouse

to rotate the earth or stop it from spinning. Zoom in or out using your fingers to pinch or spread, or use your mouse wheel or the zoom in-out bar. Try zooming in on Disney World in Orlando and you can see the parks and the people. You can't quite read a car license plate, but it's pretty close. Many cities have 3D rendered buildings and you can fly right between them if you want. Explore your planet and checkout the many options available.

Free games – Whatever games you enjoy you can bet there are computer versions of them. Many are free. On the Google search website, enter in the search bar the word “free” followed by whatever game you are interested in. You will get quite a list. Be aware, however, that some “free” games may ask you to register or set up an account. I never do this – I have too many accounts and passwords to keep track of as it is. Some games on the internet you can play with or against other people all over the world. I generally prefer to play against the computer instead of a real person. When you do find a website that allows you to play a game right on the internet for free, you can be sure there will be some advertising. It may be on the border at the edge of the game screen or window, or it may appear as “pop-up” windows. Carefully click your mouse or tap your finger on the “X” (wherever it is, usually in the upper right) to close the window. If you miss the “X” and hit any other part of the window you will probably be sent to another window with more advertising. But do not be afraid, the internet is all about advertizing you know, just click on the next “X” you see to remove the unwanted window or ad.

TV and Radio Stations – Use Google to find your favorite radio or TV programs (current or from days gone by) and see what you find. Many current TV and radio programs can be viewed or listened to on the station's internet site.

The whole idea of all this is to consider your computer a window to the world — the present and the past. Don't be afraid to search and explore, you will find fun and amazing things. Give yourself a time limit, otherwise you will find the hours slipping by and missing meals. Oops, look at the time! I think I just missed dinner.

From the August 2013 issue of PC Monitor, newsletter of the Sarasota PC Users Group, FL. Courtesy of APCUG.

Do Not Fall Prey to the Vicious CryptoLocker Extortion

by Ira Wilsker

October was the tenth anniversary of National Cyber Security Awareness Month (NCSAM). According to a statement on the FBI website, “(National Cyber Security Awareness Month) Established by presidential directive in 2004, the initiative — administered by the Department of Homeland Security — raises cyber security awareness across the nation by engaging and educating public and private sector partners through a variety of events and programs. The ultimate goal is to protect the country from cyber incidents and respond to them effectively if they do occur.”

Around the country, at K-12 schools, colleges, universities, and private businesses, thousands of seminars and events took place during NCSAM in order to educate computer users at all levels on cyber security. I had the honor and privilege of presenting two citizen awareness sessions for the city of Port Arthur, Texas. I discussed several of the contemporary online threats and how users could effectively protect themselves from those threats. One of the warnings that I repeated several times was to never open email attachments, as they are a common vector used to bypass much of the security software that we (should) have installed on our computers.

Now that the National Cyber Security Awareness Month is behind us, we should not forget the lessons learned about clicking on email attachments. Unlike our new years' resolutions that many of us make, but quickly forget to implement, cyber security threats are continuing, and in many cases becoming more threatening. One recent example is a new version of an old Russian cybercriminal extortion scam; in the original versions, which took over countless millions of computers worldwide (and still showing up in large numbers), the purloined computer displayed a window after boot that had an official looking logo of the FBI or other law enforcement agency, along with an official looking criminal complaint that child pornography (or other illicit content) was found on the computer. Nothing else could be done on the computer, as it was effectively locked by the "FBI". The computer user was told that if they did not pay the fine, typically \$200, within 24 or 48 hours, he would be subject to arrest, charged with a felony, and face 10 years in federal prison, plus a \$10,000 fine.

Detailed instructions were provided on where to purchase a specific prepaid debit card, and then entering the cards 16 digit number into the payment box on the warning screen.

After payment was received, the "FBI" would drop the charges and (hopefully) release control of the computer.

The especially nasty new type of ransom ware, also likely from Russia, goes a step further than the other recent ransom ware; the new version contains a version of a vicious piece of malware called "CryptoLocker." Some variants contain a version of the well-know Zeus trojan, which is used to install and run CryptoLocker. Typically spread via an email attachment, often apparently sent from a known acquaintance or company, the attachment appears to contain a ZIP file with a disguised file that looks like an innocent PDF file. I have personally received dozens of these emails, and I will admit that they do look like they are from a legitimate source, but I know not to open email attachments that have any vestige of being suspicious. Once opened, the attachment executes, installing itself in the Documents and Settings folder with a random file name, adding a startup command key to the registry which causes CryptoLocker to load when the computer is booted. CryptoLocker then goes through a series of servers, making it difficult to trace, eventually connecting to a command and control server. This remote server generates a very sophisticated 2048-bit RSA encryption key pair using the public key to encrypt Microsoft Office and Open Document files, as well as some common graphics file formats. CryptoLocker will not just encrypt the computer of the user unfortunate enough to open the email attachment, but can also encrypt those file types on any mapped network drive, including USB drives, network file shares, and even cloud storage folders that are made to appear as a drive letter (like "G:\ drive), which may effectively shut down a business, school, hospital, or government agency that uses mapped network drives; it only takes one infected computer to possibly compromise the targeted files on an entire network.

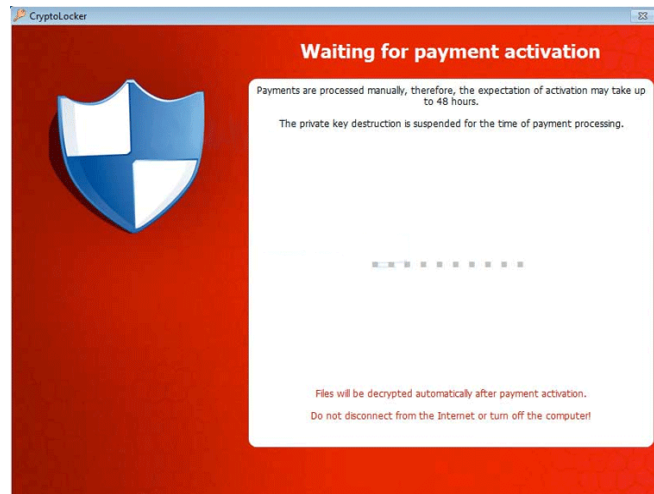
Once the files are encrypted using the 2048-bit RSA public encryption key, a warning is displayed on the computer that critical data files have been encrypted, and that the ransom (extortion) payment must be made in a specified time, often 72 or 100 hours, or else private



encryption key on the command and control server will be destroyed and “nobody and never [sic] will be able to restore files”. The extortion demand is, “ ... a payment of either 100 or 300 USD or Euro through an anonymous pre-paid cash voucher (i.e. MoneyPak or Ukash), or 2 Bitcoin in order to decrypt the files.” Anecdotally, some published reports have claimed that some businesses have received cyber extortion demands of \$10,000 or \$20,000 dollars, or equivalent amounts in Euros or Bitcoins (private currency). In order to add a sense of urgency, a countdown timer is displayed indicating the deadline to pay the ransom, or the files will forever become unrecoverable (Image: <http://blog.emsisoft.com/wp-content/uploads/2013/09/crilock.png>). The 2048-bit encryption keys used by CryptoLocker are considered in the security industry as extremely secure and virtually unbreakable, and can be expected to meet security requirements until the year 2030 (source: en.wikipedia.org/wiki/Key_size#Asymmetric_algorithm_key_lengths).

Almost all of the common security suites, including Kaspersky, Symantec, Sophos, Emsisoft, and others, can detect and remove the CryptoLocker malware and the Zeus trojan, but no one (yet) has been able to come up with a practical method to crack the encryption key and recover the encrypted files; effectively they are gone forever. Removing the infection is a moot point, as the encrypted files will remain unusable. While some experts claim that paying the extortion prior to the expiration, hoping that the cyber criminal will send the private key necessary to decrypt the files, many others, including most law enforcement agencies do not condone paying ransom under the theory that it will only encourage more criminal behavior. Cited by Wikipedia, “Symantec estimated that 3% of users infected by CryptoLocker chose to pay the ransom.” Do some simple arithmetic; if a million computers are hijacked by these criminals, and only 3% pay a \$200 ransom, the crook receives a cool \$6 million in illicit proceeds. Since multiple millions of computers have been held for ransom by CryptoLocker, the proceeds to the criminal enterprise may be staggering.

As is typical, prevention is the best method from being taken over by CryptoLocker or any of the other cyber threats. Sophos, a well respected multinational security company headquartered in the UK has published “Five “top tips” for keeping safe against malware in general, and cyberblackmailers in particular” (naked security.sophos.com/2013/10 /18/). The first of the five tips is common sense, and a task incumbent on all computer users, “Keep regular backups of your important files.” After cleaning the CryptoLocker and any other malware that infected the com-



puter, the encrypted files can be safely deleted and replaced by their backup copies. One strong warning about the backup copies and the devices that the backups are stored on; do not leave the backup devices, such as external hard drives, attached to the computer or the network, as they will likely have a drive letter that can be identified by CryptoLocker. If CryptoLocker can see it, it will also encrypt the files on those devices, making the backup copies as useless as the encrypted files on the primary hard drive. Good practice is to frequently rotate through multiple backup devices, creating redundant backup copies, and never allowing more than one device to be attached and running at any given time. The other backup devices should be stored securely, and only connected in rotation, never having more than one backup device

connected at a time. While CryptoLocker may also encrypt the files on an attached backup device, it cannot attack any unattached devices.

The second tip from Sophos is the often stated, “Use an anti-virus, and keep it up to date.” I would add to that rule that it should also be required to do frequent and periodic security scans for malware using alternate third-party security software such as Emsisoft, SuperAnti-Spyware, and MalwareBytes. My rationale for this secondary scanning by alternative scanning utilities is that prior infections may have either slipped through the primary security software, or rendered itself immune to detection by it. There are documented cases of CryptoLocker being downloaded and installed by Zeus or other malware that was already present on an infected computer, without a user opening an email attachment.

“Keep your operating system and software up to date with patches” is Sophos’ third tip. Software publishers often release patches and updates to close newly detected security vulnerabilities. According to Sophos, “This lessens the chance of malware sneaking onto your computer unnoticed through security holes.”

Number four on the Sophos list of tips is, “Review the access control settings on any network shares you have, whether at home or at work. Don’t grant yourself or anyone else write access to files that you only need to read. Don’t grant yourself any access at all to files that you don’t need to see – that stops malware seeing and stealing them, too.”

Sophos concludes its list of five tips with, “Don’t give administrative privileges to your user accounts. Privileged accounts can “reach out” much further and more destructively both on your own hard disk and across the network. Malware that runs as administrator can do much more damage, and be much harder to get rid of, than malware running as a regular user.”

Using the lessons learned during National Cyber Security Awareness Month, such as “don’t click on and open email attachments”, being aware of the tremendous threat and damage that the rapidly spreading CryptoLocker Ransomware can wreak, and following the five safety tips recommended by Sophos, our computing safety and security may be much improved. Remember that in computers, as well as in other aspects of life, prevention is far better than the alternatives.

Websites:

<http://www.dhs.gov/national-cyber-security-awareness-month>

http://www.fbi.gov/news/news_blog/national-cyber-security-awareness-month-2013

<https://en.wikipedia.org/wiki/Cryptolocker>

<http://blog.emsisoft.com/2013/09/10/cryptolocker-a-new-ransomware-variant/>

<http://www.bleepingcomputer.com/virus-removal/cryptolocker-ransomware-information>

<http://nakedsecurity.sophos.com/2013/10/18/cryptolocker-ransomware-see-how-it-works-learn-about-prevention-cleanup-and-recovery/>

https://en.wikipedia.org/wiki/Key_size

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by Bob Rankin

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Dump your fax machine, the Internet has made this dinosaur obsolete. Think of the savings on toner, paper, and time when all you really need these days is a cell phone, PDA, or PC. I have a big list of sites for you that offer free Internet faxing services. Some of them are completely free, while others offer free or limited trials. Pick the online fax service that suits you best....

FaxZero lets you send free faxes from a simple web-based interface. Just enter the sender and recipient info, type in your message, and hit the “Send Free Fax Now” button. The rich-text editor lets you add basic formatting, highlighting and fonts to your text. You can also fax a file from your hard drive. Supported file formats include PDF, Microsoft Word (DOC, DOCX or RTF), Excel spreadsheet (XLS or XLSX), image files (PNG or JPG), TXT, HTML, and PowerPoint (PPT). You can attach multiple files, but the combined size of all attachments must be 20MB or less.

And yes, it’s really free to send a fax to anywhere in the USA or Canada. You can send five free faxes per day, each with a maximum of three pages. No ads are inserted on your faxed pages, but the FaxZero logo will appear on the cover page of your outgoing fax. You can even use FaxZero to fax your U.S. congressperson or senator. I’ve written more about FaxZero in my Send a Free Fax article.



GotFreeFax is basically a clone of FaxZero, with some minor differences. You can send 2 free faxes daily to the USA or Canada, with a 3 page per fax maximum. No ads or branding appear on the cover page. GotFreeFax supports PDF, Microsoft Word, OpenDocument Text (.odt), and Rich Text (.rtf) file formats only. One unique feature is the ability to substitute tokens in the message, such as {RECEIVER_NAME}, {RECEIVER_COMPANY}, and {RECEIVER_FAX}.

PamFax is another free faxing service that offers 3 free outgoing pages (after signup) with no ads. You can also get a free fax number for inbound faxes. PamFax has an address book for convenience, integrates with Outlook, and works with popular cloud services such as DropBox, Google Drive, and SkyDrive.

PopFax is yet another free fax sending service. Like the others, you can input a brief text message, or upload a document from your hard drive. But I can’t recommend PopFax for several reasons. In the Terms of Use on their website, it says that PopFax does not guarantee “the possible alteration of the data sent by the User nor the service availability.” It also says they are not liable for damage “following to an alteration of the User data transfer.” This could be badly translated legal mumbo-jumbo, but yikes! Also my Chrome browser crashed when trying to send a DOC file with PopFax. On another attempt, it said my fax number was “invalid.” After sending a test fax to another number, it never arrived. Of course, your mileage may vary, but with so many other choices, I’d steer clear of PopFax.

Sign up with K7, a messaging system that will send free faxes and voicemail to your email address, with an option to view or listen to your messages via the web. You get a free fax/voicemail number which you can give to your family, friends, and business buds. Just sit back and wait for the faxes to start dropping into your inbox as email attachments. If a K7 number is inactive for 30 days (no incoming voice or fax messages), it will be terminated. K7 cannot be used to send outgoing faxes. My companion article Free Inbound Faxing goes into more detail about Faxaway, an almost-free service that forwards incoming faxes to your email.

eFax claims that they are the largest online network on the planet with over a million subscribers in 2,500 cities and 27 countries. Also known as Zipfax, you can send and receive faxes as email attachments. You simply use the recipient’s fax number and eFax’s address. The 30-day freebie allows you to send or receive up to 150 pages. If you don’t cancel during the initial month, you will be charged \$16.95 per month. See also Free Inbound Faxing for more details on eFax Limited Accounts, a free service that forwards incoming faxes to your email.

Nextiva Fax offers a 30-day free trial, including 500 free faxes. Send a fax by email, or send and receive faxes from Microsoft applications. Instead of hitting the print button, simply select “fax” right from Word, Excel, etc. Nextiva also lets you send and receive faxes from mobile devices. After the trial period, you’ll be \$8.95 per month, unless you cancel.

RingCentral is designed for small businesses, not only can you receive and send faxes via email, they can supply you with toll-free fax numbers, custom greetings, an auto-receptionist, voicemail, and multiple extensions. The company offers a 7-day free trial, during which you get 500 free fax pages. After the trial period, you’ll be \$7.99 per month, unless you cancel.

I couldn’t find a smartphone app that sends free faxes. There’s an app called scanR that’s supposed to do that, but apparently it’s defunct. CamScanner is a free app that turns your iPhone or Android smartphone into a scanner, fax machine and PDF creator. Take a picture of a document, receipt, business card, etc. CamScanner turns it into a searchable PDF that you can fax, print or upload to various cloud storage services. Faxing costs 99 cents per page.

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Upload Video from iPhone to YouTube

Q. How can I upload a video from my iPhone or iPad to YouTube? Do I have to save it to my computer first and if so, in what format?

A. If you create a video using your iPhone or iPad, you do not need to save it to a computer in order to place it on YouTube. Simply tap the Send button (the square with a little arrow), then tap the YouTube option.

Q. Sometimes I long for the days of the floppy disc because they had labels on which I could write the disk’s contents. These days I use several USB flash drives which are too small to write anything on. How do you keep track of the contents on your flash drives, Mr. M?

A. I use different flash drives for different purposes so I don’t really have any need to label the contents in any specific manner on the exterior of the drive. For example, I have one flash drive that I use for backing up documents, one that I use for Quicken backups, a drive that I use for photos and one for music backups. When I insert a drive into a USB port, I can then easily view its contents.

Because I primarily work with documents, that’s the flash drive that I leave plugged into the USB port most of the time. I use Quicken on another computer, so that flash drive resides in one of that system’s USB ports. The photo and music flash drives I insert as needed. Some “experts” recommend that flash or thumb drives not be left in a computer when not being used, but having used flash drives since they first arrived on the digital scene, I have never experienced any problem leaving them inserted. And that way I know where the drive is, as well.

I generally purchase different color flash drives or at least flash drives that don’t look identical, which makes it even easier to keep track of what’s what.

Q. When I move the cursor on my laptop over the icon that lets me know whether the laptop is plugged in, a bubble pops up that shows “4 percent available. Plugged in, not charging.” Shouldn’t the battery be charging?

A. It's possible that your particular battery won't begin to charge until it is at a certain level, such as below 50% or 25% capacity. Plus, depending on the type of battery, you may not want small, partial charges because the battery may only have X number of charging cycles. If that's the case, it doesn't matter whether you charge it 10% or 90%, both count as one charge cycle, so the fact that it's not charging could be to protect you from wasting finite charge cycles.

For a truly definitive answer as it relates to your specific computer/battery, I would recommend contacting the manufacturer of your laptop through its Web site Support area. In the alternative, look at your battery, note the brand, type or model number, then go to the manufacturer's Web site where specific charging details and recommendations will be available.

Mr. Modem's DME (Don't Miss 'Em) Sites of the Month

CRAYON

The acronym CRAYON, stands for "CReAtE Your Own Newspaper," the name of one of the longest running sites on the Web, having made its debut in March 1995 – long before many people even heard of the Internet. To get started, I'd suggest going to the Help area, which will guide you through the process of creating your own newspaper with step-by-step instructions. If you have ever experienced the desire to only get the parts of a newspaper you enjoy reading, CRAYON can make that happen.

www.crayon.net

Jamie's Home Cooking Skills

Whether you are a college student who has just entered the world of having to cook meals for yourself, someone who wants to learn more about cooking, or a parent who wants to teach children how to cook, this site (created by celebrity chef Jamie Oliver) is for you. The site was designed for people with a desire to obtain their home cooking certification (who knew?), and to help enlist schools to provide the appropriate educational courses. Use the Index to select a course from the drop-down menu. It will display the recipes, skills, fact sheets, videos and images that go with that course. You can also head directly to Recipes, Skills, Activity Sheets or Fact Sheets from the navigation menu at the top of the page.

www.jamieshomecookingskills.com

NIH Senior Health

The National Institute of Health's site for Senior Health information. I particularly like this site because it was designed for mature eyeballs, meaning the font is easily changed to something more readable. You can even change contrast colors to make it easier to read. The menu at the top of the page contains Health Topics A-Z and Video A-Z, from which you can select subjects or videos of interest.

<http://nihseniorhealth.gov>

For more information about Mr. Modem's award-winning, weekly computer-help newsletter featuring personal answers to your questions by email, visit www.MrModem.com

Finding Apps for that New Android Tablet or Smartphone

by Ira Wilsker

I recently added a new member to my stable of technology products; I purchased a tablet computer. I wanted something lighter to carry than my well used notebook (laptop) computer, with a screen large enough to be able to easily read my collection of e-books. It had to have fast Wi-Fi capability, a reasonably sharp and bright screen, long battery life, fast

processor, a lot of memory, and had to be reasonably priced.

As is typical before making any major technology purchase, I researched the potential choices currently available, mentally noting those tablets that impressed me. I looked at some of the newer Apple iPad models, which met all of my requirements, but were the most expensive of those that I saw. I examined some of the newly released tablets running a flavor of Microsoft's Windows 8, and found them interesting, but somewhat expensive (though less than comparable iPads), and lacking the enormous variety of apps available for the other major operating systems. In the local big box stores and online, was an enormous selection of tablets running versions of Google's Android operating system; these tablets varied greatly in size, features, and price. Published sales reports still give Android a market share of over 75% (some say 80%) of the smart phone and tablet market, which is triple the combined market share of Apple iOS and Microsoft Windows powered devices. I already have an Android smart phone, but I am very willing to try something new, if practical and cost effective.

I ended up purchasing a generic branded Android tablet running Android 4.2.2 (Jelly Bean), with a 10.1 inch (diagonal measured) screen, a lot of both operating and storage memory, and a host of other desirable features. I found this particular model listed on a "daily deal" website that compiles the best current deals both online and in-store, and after seeing the bundle of extras that it came with, along with an excellent price, from a domestic seller with a very good reputation, I bought it. This particular tablet came with a fast, dual-core ARM processor, a 10.1 inch 1024x600 HD resolution screen (not the highest resolution available, but more than adequate for my purposes), 1 gigabyte of DDR3 memory (for operations), and 8 gigabytes of NAND Flash memory for storage. There was also a slot for a readily available 32 gigabyte memory card (which I purchased separately). This tablet included two digital cameras, a moderate resolution front mounted camera "web cam" for video conferencing, and a higher resolution rear mounted digital camera. With a normal complement of speakers, microphone, two micro USB ports, HDMI television port (can directly play content on an HDTV), video accelerator, GPS, G sensor, speaker jacks, a high capacity Li-Polymer battery, and a variety of other features on the tablet made this too good to pass up for the price. Bundled in this "daily deal" was a leatherette case that included an almost full sized USB connected keyboard, stylus, and ear bud headphones. All of this, including shipping, was under \$120. An optional two-year extended warranty from one of our local big box electronics stores was offered for \$12.99, which I added to my purchase.

I must give a warning about some of the very low cost Android tablets available; I did see both locally and online, a large number of Android tablets running obsolescent versions of the Android operating system, mostly version 2.2, that could not be readily updated, and were also incapable of downloading apps from the massive Google Play Store. I cannot recommend those tablets that have much older versions of Android, and the inability to access most apps, no matter how cheap. Another warning has to do with a particular brand of tablet (and other electronics); according to the Consumers' Reports magazine blog, the Consumerist, Coby Electronics, a brand widely available in big box and discount stores, has ceased operations, leaving owners without any factory warranty protection or support (sources: consumerist.com/2013/10/18/new-owners-to-coby-electronics-customers-sucks-to-be-youandconsumerist.com/2013/10/16/coby-electronics-shuts-down-taking-customer-warranties-with-it).

While almost all Android tablets come with a small collection of apps, there are currently about a million Android apps and games available. The granddaddy of app stores is Google's own Play Store (play.google.com/store/apps) which can be accessed directly by clicking on the Play Store icon. The Play Store will display a menu of file types consisting of apps, games, movies and TV, music, books, and magazines. While the Play Store is the single largest source

of apps and other material for Android devices, there are also some other excellent Android app resources available that offer independent ratings and evaluations of thousands of apps, as well as direct downloads.

My personal favorite is the Android section of Gizmo's TechSupportAlert.com. News and tips about Android apps and devices is available from Gizmo at techsupportalert.com/mobile-apps/android, and the community recommendations of the best Android apps is available at techsupportalert.com/best-free-android-apps.htm. According to Gizmo, "This list of Best Free Android Apps now includes 220 apps in 118 categories. "Each of the recommended apps has been tested and evaluated by the community volunteers that regularly perform that service for Gizmo, and present diverse opinions on the apps listed. If I had to personally choose only a single source of app information and recommendations for any of my Android devices, Gizmo's listing of the "Best Free Android Apps" would be that resource.

Gizmo has another shorter listing of Android apps that it calls "9 Superb Free Apps that you Simply Must Install on your Android Device" online at techsupportalert.com/content/9-superb-free-apps-you-simply-must-install-your-android-device.htm. This particular listing is for Android versions 4.0 and higher (Android code names "Jelly Bean" and "Ice Cream Sandwich"), but a similar list is available for older versions of Android (version 2.0 and its variations). The latest iteration of this list says that the nine (free) apps that should be installed on all newer or updated Android devices running Android 4.0 or higher (Ice Cream Sandwich and Jelly Bean) are: X-plore File Manager (Gizmo calls this "Best Free File Manager for Android"), AirDroid (wirelessly connects tablet or smart phone to PC, sharing a desktop), Barcode Scanner (QR code scanner), Pocket (article bookmarking and retrieval utility), Kingsoft Office Free (full featured office suite, compatible with Microsoft Office), KeePassDroid (secure password manager), avast! Mobile Security (comprehensive security software with lost device detection), Llama – Location Profiles (automatically manages user profiles, Wi-Fi, and airplane settings), and 1Tap Cleaner (comprehensive cache cleaner, history cleaner, call/text cleaner and default cleaner). Gizmo provides links to download these nine utilities directly from the Google Play Store.

Another personal favorite source of Android news and apps is Ashraf's DotTech. The section with the latest android news, tips, and tricks is online at dottech.org/tag/android-tips-and-tricks. One recent article that may be of utmost interest is dated October 25, and titled "How to remotely locate, lock, or erase your lost or stolen Android smart phone or tablet" (dottech.org/132687/how-to-locate-lock-erase-data-android-device). Devices running Android 2.2 and later all include the capacity to perform those functions (remotely locate, lock, or erase your lost or stolen Android smart phone or tablet) on a missing device. This feature would be very valuable in the event that an Android device is "misplaced" or stolen. For those who prefer a more comprehensive lost device app, Ashraf recommends that users download and install avast! Mobile Security (dottech.org/22962/best-free-anti-theft-app/) which includes avast! Anti-Theft, which may also be run as a free-standing app.

Ashraf and his volunteer crew also test and evaluate Android apps, posting their findings online at "Best Free Android Apps" (dottech.org/best-free-android-apps). Ashraf has distinct recommendations for the best communication apps, file and document utilities, productivity apps, privacy and security tools, multimedia players and editors, network and internet tools, and miscellaneous apps. An Android device user who installs the top rated apps in each of these categories will have a very productive device.

Dallas based MakeUseOf, a small, family run technology resource with an excellent reputation, also has a comprehensive list of recommended Android apps, hints, and tips. The MakeUseOf hints and tip page is online at makeuseof.com/service/google-android, and is

typically updated several time a day with the latest information; this page is an excellent resource for those who may wish to be kept informed about the latest Android news and ideas. MakeUseOf also lists its top rated and recommended apps on a single page, “The Best Android Apps” at makeuseof.com/pages/best-android-apps, which displays images and information on the 154 apps that it top-rated. According to the publisher, “On this page, you will find the best Android apps for all your needs. We’ve taken the effort to categorize the apps and picked only those we believe to be the best ones and which will most likely be useful to you. “While the majority of the recommended apps listed are free, there are several apps listed that have a nominal charge, and a small number of apps where MakeUseOf explains why it recommends the paid app instead of the free version of the same app.

Not to be outdone, Amazon also offers an extensive library of over 129,000 Android apps. These can be located with a simple search on Amazon for “Android apps” which will open the Android selection. Many of these apps are free, and many are paid, but any charges are clearly displayed before they are downloaded. Clicking on the icon for any of the apps will open what may arguably be the most comprehensive information about each of those apps. Just as in the Google Play Store, it is common for thousands of app users to post their ratings and comments about each app listed. personally, I utilize these ratings to help decide which apps that I want to download. Amazon can directly send any free or purchased app directly to any registered device. An Amazon account (free) is required, but it is necessary to enter a credit or debit card number in order to have full access to the download services.

In future columns I will list some of my personal experiences and recommendations for Android apps, as well as information on how to safely install apps that the Play Store says are not compatible with users’ devices. I will also be writing about the hundreds of thousands of free books and magazines that can be downloaded for free to Android and other portable smart devices.

After having an Android smart phone for quite a while, this new tablet will be a lot of fun. Exploring through over a million Android apps and games will be fun; you can inexpensively also have fun with these apps.

Websites:

<https://play.google.com/store/apps>

<https://www.techsupportalert.com/mobile-apps/android>

<http://www.techsupportalert.com/best-free-android-apps.htm>

<http://www.techsupportalert.com/content/9-superb-free-apps-you-simply-must-install-your-android-device.htm>

<http://dottech.org/best-free-android-apps>

<http://dottech.org/category/android/>

<http://dottech.org/tag/android-tips-and-tricks>

<http://www.makeuseof.com/service/google-android/>

The Smiley Face Turned 31 on September 19th, 2013

by Art Gresham

Under the Computer Hood User Group, CA

Scott Fahlman was the first documented person to use the emoticons :-) and :- (, with a specific suggestion that they be used to express emotion. The text of his original proposal, posted to the Carnegie Mellon University computer science general board on 19

September 1982 (11:44), was thought to have been lost, but was recovered 20 years later by Jeff Baird from old backup tapes.”

19-Sep-82 11:44 Scott E Fahlman :-)

From: Scott E Fahlman <Fahlman at Cmu-20c>

I propose that the following character sequence for happy: :-)

Read it sideways. Actually, it is probably more economical to mark things that are sad, given current trends. For this, use :-(

The information in the paragraph above is quoted from Wikipedia http://en.wikipedia.org/wiki/Emoticon#cite_note-smiley-1

It is a very abbreviated summary of the story of how the keyboard characters we now call a Smiley Face came into existence. It is part of a much longer story of the inner workings of the earliest forms of computer to computer, and user to user communications, long before the internet as we know it. These ‘Bulletin Boards’ were first commonly used among academics. It all began as a rather prankish comment following this post on the Computer Science Bulletin Board System at Carnegie Mellon University.

“At around noon on September 16th, 1982, and in response to a similar scenario involving pigeons, Neil Swartz posted the following hypothetical situation to the CMU CS BBS:”

“There is a lit candle in an elevator mounted on a bracket attached to the middle of one wall (say, 2" from the wall). A drop of mercury is on the floor. The cable snaps and the elevator falls. What happens to the candle and the mercury?”

A very delightful reading of the complete story of the evolution of :-) is at <http://rhizome.org/editorial/2013/mar/13/emoticon1/>

I am sure you will be ROFL when you read it.

From the September 2013 issue of Drive Light, Newsletter of the Under the Computer Hood User Group, CA. Courtesy of APCUG.

The Lighter Side

Murphy's Laws of Computing

1. When computing, whatever happens, behave as though you meant it to happen.
2. When you get to the point where you really understand your computer, it's probably obsolete.
3. The first place to look for information is in the section of the manual where you least expect to find it.
4. When the going gets tough, upgrade.
5. For every action, there is an equal and opposite malfunction.
6. To err is human... to blame your computer for your mistakes is even more human, it is downright natural.
7. He who laughs last probably made a back-up.
8. If at first you do not succeed, blame your computer.
9. A complex system that does not work is invariably found to have evolved from a simpler system that worked just fine.
10. The number one cause of computer problems is computer solutions.
11. A computer program will always do what you tell it to do, but rarely what you want to do.

The future message in a bottle.

