



Midland Michigan

BITS AND BYTES

December 2015

<http://mcc.apcug.org/>

President Piper's Ponderings....

December will be our traditional holiday pizza party. It will be the third Wednesday, Dec 16, 2015. The Club will provide pizza, pop and table service. Please bring a dish to pass, preferably healthy, that will feed 6-8 adults. We do not have a specific topic, so bring your questions. Feel free to bring a friend or family member. Remember, we will also have as our raffle items two, \$25 gift certificates to Amazon.

We also will be electing Club Officers for the year 2016 at the December meeting. All the existing officers have agreed to serve for another year.

January 2016 will be three short subjects; the exact titles have not yet been determined. February is looking like a discussion on backup and syncing of files, what options are available, and what are the differences between the two.

As I look back on 2015, the Club had 9 great topics presented by 4 different members. We gained 2 new members (David Clouse and Alan Reisig); unfortunately, we also lost a member (Kathy Bohl). The Club also purchased and learned to use a new projector.



May you and your family have a Merry Christmas as we all look forward to an even better year in 2016.

See you Wednesday, December 16.

(The above comments are the opinion of the author and do not necessarily reflect the views of the Midland Computer Club.)

GENERAL CLUB MEETING

Midland Community Center, 2205 S. Jefferson Ave, Midland MI
Room K111, Barstow Shipps Wing

Wednesday, December 16, 2015
7:00 P.M.

Topic: Club Holiday Party

2015 BOARD MEMBERS

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Please let Howard or Bill know of topics you would like covered at future meetings.

PUBLICITY

Al Adams aladams12@yahoo.com

Board Meeting

First Thursday of the month
 7:00 PM

Chapel Lane Presbyterian Church,
 5501 Jefferson Ave., Midland MI

Useful, useless and strange (in no particular order) Web Sites:

<https://campaigns.f-secure.com/router-checker/>

F-Secure has a website where you can check to see if your router has been hacked.

<http://tinyurl.com/qcv47zv>

Most of us have some sort of computer network in our homes. It may be small and consist of one router and one computer or it may consist of a couple routers and multiple computers. YouTube offers over 200 free videos on networking, so you can learn what you need to know about networking and better control your home network.

<http://tinyurl.com/lwf78xf>

This 1930's video shows how a differential gear (in rear wheel drive cars) was designed and how it works.

<http://tinyurl.com/ozqg7vn>

Watch Andy Richter's take on the Apple Watch while appearing on Conan's late night show. Apple doesn't make mistakes.

<http://shareit.lenovo.com/>

SHAREIt - virtual network for transferring files between devices. SHAREIt allows sending content (files, photos, video and documents) between Windows Android and Apple devices

Membership Enrollment Form

NAME _____ PHONE _____

ADDRESS _____

CITY _____ ZIP _____

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Membership dues FAMILY (\$20) STUDENT (\$15) New Member _____ Renewal _____

Please fill out the above form and mail it along with payment of check or money order to :

MIDLAND COMPUTER CLUB
 1816 Bauss Ct
 Midland, MI 48642-4023

Attn: Membership Chairman

You may also pay for membership at a regular club meeting

Tips, Tricks & Techniques (submitted by Carol Picard)**Windows 10 Store Updates**

By default Windows Store is set to automatically update installed apps. However, on one of my Windows 10 computers, when I open the Store app, it sometimes indicates there are updates to be installed and it will start updating automatically. If you are not logged on to an Administrator account, strongly recommend that you close the Store app, log off the current account and log on as Administrator account to continue the update process.

Open Store app, if it doesn't indicate there are updates, manually check for and install updates.

1. Tap or click the user icon on top, next to the search form
2. Tap or click *Downloads*
3. Tap or click *Check for updates*

Connectify.me

Connectify Hotspot transforms your PC into a real WiFi hotspot; to share your computer's Internet connection as Wi-Fi with any other PC or mobile device. If you only have a wired/Ethernet connection, this software creates a virtual router allowing you to share the Internet connection with other devices, e.g., tablet, other computers, and also share files between those devices. <http://www.connectify.me/hotspot/> There is a free version but appears there is a shut-off timer with the free version but couldn't find what the time limit is. Lifetime license for Hotspot Pro is currently \$35.00.

Windows 10 - Rename Computer

Previous versions of Windows provided the option to name the computer as part of the setup. Windows 10 assigns a name to the computer automatically. If you want to change the computer name to something more identifiable, recommend changing the name immediately after completing the initial setup, before adding users or installing software.

1. click Start button
2. right click Computer
3. click Properties
4. under Computer name, domain, and workgroup settings, click Change settings
5. on Computer Name tab, click Change
6. under Computer name, delete old computer name, type a new computer name, click OK

Check out current scams in your State

<https://action.aarp.org/site/SPageNavigator/FraudMap.html>

APCUG Beta Security VTC

On October 17, 2015, APCUG presented a Virtual Technology Conference covering
ID Theft - How to Avoid It - Hewie Poplock
Customizing Win 10 and Edge Privacy & Security Options - Bill James
How Secure is Your Device - Jere Minich
Protecting Yourself, Yourself - Judy Taylour

The PDF presentation slides, handouts, and links to the videos are available online at:

<http://apcuq2.org/apcuq-2015-security-beta-virtual-technology-conference-vtc17/>

These are volunteer presentations, so, as with our Club presentations, may be some minor glitches.

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My Windows 10 Upgrade Experiences

By Frank Ramsey, Newsletter Editor, Akron Canton PCUG, Ohio.

www.acpcug.org [af Ramsey \(at\) yahoo.com](mailto:af Ramsey@yahoo.com)

I've been previewing Windows 10 since October of 2014 and really like it. The official release couldn't come fast enough for me!

I'm been fortunate enough to have a great laptop to run the preview on...i7 processor, 8 gigs of memory, with a touch-enabled 12" screen. I'm also fortunate enough to have had a spare hard drive to install the preview on. Along the way this disk was replaced by an OCZ SSD disk with Windows 10 migrated using Macrium Reflect, Fast and responsive machine.

As I was running build 10240, July 29th came and went. My preview machine didn't see anything, other than the patches/updates released shortly after. Microsoft gave me a copy of Windows 10 for being part of the preview. Kool!!!! The real fun came with my other machines.

The other machines ran a mix of Windows 8 Pro, Windows 7 Home Premium and Windows 7 Ultimate. Talk about a disaster waiting to happen...

Being a somewhat impatient person, I found that if you went to <https://www.microsoft.com/en-us/software-download/windows10>, you could grab the appropriate (32- or 64-bit based) downloader and updates rather than wait for Microsoft to download them. I grabbed an upgrade to Windows 10 Pro 64-bit and Windows 10 Home 32-bit. Yep, that's the other kicker...versions based on differing hardware architecture. Yes, I had to totally download the update for both. They are 3-4 gigs in size, so be prepared to wait a while. After the first downloaded I copied the appropriate folders (\$Windows.~BT and \$Windows.~WS) from the root of C: to another location...otherwise they would be overwritten by the next download. I also deleted these directory contents after downloading the first files to be sure I had only the proper files for the 2nd download.

I decided to take it easy...the first upgrade was to a laptop running Windows 8.1 Pro 64 bit. This had plenty of free space on the C drive and this hard drive was setup up to the Microsoft standards of dedicated boot and system drive.

I first uninstalled the software I no longer used...know why? Well it just seemed like the proper thing to do. Most were older versions of utility suites that i got from sharewareonsale.com.

Since I like to try various antivirus products, I removed the antivirus product before running the update. Also because the Google Chrome browser simply did not run properly on the preview of Windows 10, I removed it. I copied the folders listed above to the C:\ drive of the hard drive of interest then ran setupdat.exe from \$Windows.\~WS\source\Windows\source and away we go.

After a few hours and a few reboots, the process completed successfully. I logged in with my preview ID and the update activated, ran the update tools to grab the latest updates, installed my anti-virus program and Firefox and it was done. All in all, relatively smooth.

Basking in the glory of a successful update, I turned my attention to my Dell Venue 8 Pro tablet. The tablet was running a 32-bit version of Windows 8.1 with the drive protected by Bitlocker drive encryption. It had about 6 gigs free.

Before running the cleanup as above, including removing antivirus, I cleaned up everything I could; 6 gigs was below the stated minimum of 16 gigs free storage. I did check online and found that various folks reported the update process would ask for other storage to use during the update if the update process found additional free space was required. Let's remember this is a tablet lacking a mouse and keyboard and with marginal free storage. Still I pressed on and ran the update.

The update ran through the various stages for a couple of hours. Just when I thought it was successful, I saw the restoring the previous version message and the tablet proceeded to roll back the install. After another 40 minutes of roll back, the tablet booted into Windows 8,1 and displayed an error message of "0x80070002-0x20007 failed in the SAFE_OS phase with an error during INSTALL_DRIVERS operation|.Boot failed ". Researching this error online was of no help. Lots had the solution, but none met my circumstances. SO what the heck, I tried the update again.

The second update try also failed. I was thinking I might have to perform a clean install or forget about running Windows 10 on this device. Performing a clean install was troublesome...without an OS update would I get a valid Windows 10 product key for free? I had the install media for Windows 8, so I had the required media in case a reinstall was required.

However, as I had reinstalled Windows 8 on this tablet once before, I was not looking forward to it. Having to attach a mouse and keyboard to the tablet and manually unlocking the Bitlocker protected drive is doable, but a royal pain in the tush!

Then I got lucky. One of the devices I purchased along the way was a USB to DVI display adapter from mygica.com. I had tried using this with my Windows 10 preview laptop and discovered the included drivers did not work. A quick search of the Internet turned up some updated drivers. These worked fine in the preview Windows 10 version. I stumbled across the fact that I had used this device on my tablet. Perhaps????

Uninstalling the offending drivers from the tablet I was ready to try again. I was more than a little worried because the tablet now had less than 5 gigs. Try as I might, I couldn't find anything else to remove or purge. "On through the valley of ..." ...well you get the idea. I tried the update again, mentally preparing myself for a full Windows 8 reinstall.

Low and behold, it worked! The update finished successfully, the tablet booted and I logged in using the touch interface with my preview ID to a fully activated Windows 10! Beautiful!!!!

As before, I installed antivirus (a different one than before...remember I like to try different antivirus products) and Firefox, sync'd Firefox and I was up and running. On to my final challenge.

The final challenge is a desktop running Windows 7 Ultimate 64-bit with lots of installed software -- this unit was troublesome. It simply hadn't been running well for a while and I had put off doing anything about it because I knew Windows 10 was coming.

First, I performed a full backup. Then I tried to make a virtual drive using Paragon's Virtual Drive tool. This failed due to conflicts with the Visual C++ runtime library. Try as I might, I could not fix this issue, so the heck with it. I performed the cleanup as above, but forgot about Google Chrome (more a little later). I'd been toying with the idea of installing a 240-GB SSD as the boot drive, so I cleaned up the hard drive even though it had over 100 gigs of free space. How? Well I moved OneDrive, Dropbox, Downloads, iTunes and some others to other drives in the system. On to the update.

Yes, the update failed. Actually the desktop appeared to hang a couple of times so I did a forced reboot using the power off after letting the computer sit for at least an hour with nothing appearing to happen and no hard drive activity. Windows 10 update rolled back to Windows 7 with an error of "0xC1900101-0x40017 Installation failed in the SECOND_BOOT phase with an error during BOOT operation"

Since I forcibly power cycled the computer not once, but twice, I figured I knew what happened...I didn't give it enough time. The next evening, I repeated the update letting it sit for houuurrrs at each pause. Had to power cycle it again. With the same result. Darn!

More deleting of software. This time I remembered Google Chrome and removed it. I also turned off the Wi-Fi adapter to prevent the unit from connecting to the internet (some on the Internet suggested this). Off to the update again. I had to power cycle once this time, but the update succeeded, at least I thought so because I was able to sign in to a non-activated machine. It was late. Time to power off and perform the cleanup tomorrow.

Tomorrow came. On came the desktop. And it just wasn't right. The mouse and keyboard were sticking. Video resolution was low. It looked like the proper video card had not been detected. And on and on. I decided to return to the previous OS. Which failed reporting no OS on the drive.

I have to tell you that the drive in question did not fit Microsoft's standards in that there is no boot partition. The boot partition is that 300 megish partition that Microsoft started installing separate from the system partition that actually has the operating system. I've not been a fan of the boot partition and on this machine simply removed it.

Now is where it gets fuzzy. Somehow during one of the attempts at booting with no OS drive, I was presented with an option to perform a full install of Windows 10. Exactly how I don't recall. Might as well I said...off I went.

After confirming to preserve the user files and that I would lose all the installed applications, the reinstall started. And went fine till the 1st reboot. After letting it sit for almost 2 hours, I power cycled the unit, expecting it to lock up again, with another power cycle and then what? Reinstall Windows 7 Ultimate from scratch, then perform a Windows 10 update? Not a clue.

The 2nd power cycle never was required. Following the first power cycle, the install of Windows 10 continued and completed successfully. The install preserved the account I was using, so logging on I went.

To discover the computer was not activated, the proper video card had not been detected and Wi-Fi refused to work. Ready to pull my hair out (not a good thing, trust me!) I rebooted and signed on again using the local account. Then I connected the local account to the preview account, connected the Wi-Fi and rebooted.

Logged back in and Windows 10 was activated. Ok, why? Well I had been using the local user that I had created to log onto the computer. This time I used my preview ID. That has to be the key. I downloaded the updates and got the update for the video card. Apparently the AMD card in the unit is not supported by the install, but an update. Hey, at least it worked! I'm left to install antivirus and deciding what applications are critical and must be installed. I'm not unhappy about the results as I figured it was time to perform a clean OS install and reinstall applications. 6 of one, half-dozen of the other.

UPDATE! I'm adding this a few days after the original article was written. The updated Windows 7 Ultimate machine simply wasn't right. While it seemed to run, it was troublesome. I finally decided to reinstall from scratch again, this time preserving NOTHING.

Just in case, I booted from a rescue CD and copied the C drive to another drive then started the reinstall.

Windows 10 has a decent reinstall process. Go to Settings, Update, click Recovery and answer the questions. My answers were to reinstall, preserve nothing, and reformat the C drive. Away we go.

Things looked good. I gave it all the time it wanted. Ok, after waiting 5 hours for the process to finish, I power cycled the unit. It restarted at the 64% mark and finished successful.

Because I left the Internet connected, the update connected to the Internet and grabbed "critical" updates during the final install phase. For this reason, the proper video drivers were already installed when I signed into the system after install.

I preceded to install required applications, antivirus, Quicken, Office and am using the updated Windows 7 Ultimate machine to finish this article. So far so good!

So what did I learn?

- Prepare for the worst...you might lose the applications and associated data. Determine what are critical apps and find the install media BEFORE the installation.
- Copy your documents to the cloud or other storage.
- Uninstall antivirus (NOT disabled), before the upgrade is run.
- Clean up software that is no longer used or needed.
- Look at any attached devices to see if they might be a problem to the upgrade. Uninstall them unless you are totally sure.
- Remove Google Chrome. It simply doesn't work with Windows 10 now. I'm sure Google will release a fix, but as of late August, 2015, get rid of it.
- Check on free space and clean up. Empty the Recycle bin. Cleanup the temp folder.
- Perform a good backup
- Check the integrity of the hard disk (Right Click on the C drive, select Properties, Tools, Error Checking, Scan drive and fix errors found)
- Don't be afraid to power cycle the unit. Sometimes it seems the install process hangs during the install and power cycling may be the only option.
- Have patience!

The last one is the key. Don't get too discouraged...at least try not too!

Hopefully you've been informed and somewhat entertained by my Windows 10 journey. Let me know your experiences.

How “Silent Calls” Lead To Identity Theft

The Dark Side of Robocalling

By Bob Rankin, Ask Bob Rankin August 25, 2015 column

http://askbobrankin.com/fcc_cracks_down_on_robotcalls.html

bob (at) rankin.org Reprinted with Permission

We’ve all had the experience of answering a phone call only to hear nothing. Typically, we just hang up and shrug. But those “silent calls” are the first step in well-organized campaigns to steal identities and bank account balances. Here is how these scams work, and what you should do to protect yourself...

“Hello? Hello? Anybody there?” That first, silent call is just a probe to see if a phone number is in active use. Automatic dialing machines place tens of thousands of silent calls per day using free or dirt-cheap Voice-over-IP technology.

Software “listening” on the caller’s end can tell the difference between a “not in service” recording and your puzzled “Hello?” or even a human cough. Phone numbers identified as active are passed to another robocalling system for follow up calls that usually come days later.

The next robocall will feature a recorded voice saying something like this: “This is an important message regarding your debit card. If you are the cardholder, press 1 and stay on the line. Otherwise, please have the cardholder call us at 1-800...”

In case you’re thinking about ignoring these demands, the recording warns, “A temporary hold may have been placed on your account. It will be removed after you have verified account activity.”

If you follow orders, you’ll be guided through the process of providing your account number, PIN, birth date, the card’s expiration date, and even your Social Security Number to a machine. There is no “live agent” to argue with; just provide the required information and don’t hang up, or “your access to funds may be delayed.”

Why Do People Fall For This Scam?

Are you getting tired of those annoying telemarketer and robocalls? There are some steps you can take to stop unwanted phone calls. See my articles [Stop Unwanted Phone Calls](#) and [FCC Cracks Down on Robocalls](#) for some tips.

http://askbobrankin.com/stop_unwanted_phone_calls.html

http://askbobrankin.com/fcc_cracks_down_on_robotcalls.html

Reading about it here, this process seems obviously bogus, a trick that no reasonably cautious person would fall for. But in real life, it works often enough to be worthwhile for the scammers. Many banks use robocalls to authenticate unusual activity on customers’ accounts. Paypal does it. These legitimate robocalls lend credibility to the phishing calls. So phone-phishing is big business.

Illegal automated calls are the number one source of complaints filed with the Federal Trade Commission. The agency receives an average of 170,000 complaints about robocalls every month!

Once the robocalling machines have pried enough information from a victim, it is turned over to human fraudsters. Experts at social engineering call financial institutions pretending to be cardholders. A simple question like, “What is my available balance?” identifies the big fish. Then the fraudster cons a customer service rep into changing the account’s mailing address, and the theft is complete.

Banks and credit card companies are fighting back with the help of companies like Pindrop Security, an Atlanta-based firm that specializes in phone fraud detection and advanced caller-authentication systems.

Ordinary caller-ID and Automatic Number Identification (ANI) technologies are virtually worthless for authenticating callers. Fraudsters long ago figured out how to spoof caller-ID and ANI data so that they can appear to be calling from any number, including a prospective fraud victim's. I've noticed in the past few months that most of the robocalls I've received are coming from numbers that appear to be local.

What's a Phoneprint?

Catching spoofed calls is job number one. So Pindrop has developed a Fraud Detection System (FDS) that analyzes an incoming call to generate a fraud risk score based on the caller's location, device type, and 150 other subtle characteristics. If this Phoneprint™ profile doesn't match up well with the caller-ID and ANI information, the call is flagged as a "potential spoof."

Suspicious Phoneprints™ are compared to Pindrop's large database of Phoneprints™ known to be associated with criminal enterprises. The company updates this database by luring fraudsters to its "honeypot" of over 250,000 inactive phone numbers and creating Phoneprints™ of the fraudsters' calls. Pindrop claims that its FDS is over 90% accurate in determining the location of a caller, the type of device used, and the network type for VoIP calls (Skype, Google Voice, etc.).

Recordings of flagged calls are brought to the attention of a financial institution's fraud alert team within minutes of their completion, before any transactions or changes to a customer's record can be finalized. The fraud team can put a hold on suspicious activity until it can be verified with the customer.

The best thing consumers can do to avoid the "silent call" pitfall is to simply hang up, according to the FTC. Don't press any buttons, even the one that's supposed to remove you from the caller's call list. That will only result in more robocalls. You might also want to try a free service called Nomorobo to filter out these annoyances.

How to Stream TV

By Sandy Berger, CompuKiss Sandy (at) compukiss.com www.compukiss.com

There is no doubt that the world of television content and the way we get that content is changing. Many people are "cutting the cord" by turning their backs on cable and satellite TV. These folks are turning to streaming TV shows and movies. For those of you who are not yet familiar with "streaming", here's a quick tutorial on how to stream and what you need.

Streaming is named for a technique for transmitting data over the Internet so that it can be processed as a steady and continuous stream. This differs from downloading content in which the entire chunk of data must be downloaded before it can be processed. Most users do not have enough bandwidth to download an entire movie or TV show, so streaming is a great technique. During streaming the content is constantly being processed so you can watch the show while it is being processed with no interruption.

Streaming allows you to watch television shows and movies without having a cable or satellite subscription. You can use streaming to augment a basic cable or satellite TV subscription or to eliminate cable or satellite subscriptions completely making it a valuable tool for TV watching.

Also, Netflix and Amazon are now producing their own programming, much of which, like House of Cards, is become very popular. With streaming you can also watch a wide variety of movies and the past episodes of many different TV shows.

Even if you are not technically inclined, you will find that streaming is quite simple to setup. Here's what you need.

First -- a HDTV with a HDMI port. While older analog TVs can also be set up to stream, having an HDMI port make it much easier. All HDTVs, which include most newer TVs have these ports. To find them look at the back of the TV, they are usually labeled HDMI.

Second – You need a good broadband Internet connection. This is how the data (movies) will get to your television. The faster the better and you might want to upgrade your Internet, but you may not have to. Try it with the connection you have right now. You might be pleasantly surprised.

Third -- you need a streaming media device. Some newer TVs and most Blu-ray players can access the Internet. If you have one of these you can use it as your media streaming device.

If you don't have one of these, you will need to purchase a new device. The good news is that these devices are small and inexpensive. These devices include Chromecast, Roku, and Amazon Fire TV and Fire Stick. They range in price from \$30 to \$100. I have tried them all and they all work quite well. If you already belong to Amazon Prime, an Amazon Fire might be the best choice. To get the best selection of content, Roku is the best. In any case, the main difference in price is often whether the device comes with a remote control or not. If it doesn't come with a remote, like the Chromecast, you will have to use a tablet or mobile phone to control it. If that doesn't appeal to you, opt for one with a remote.

Fourth -- you will need a wireless router. Although some devices can hook up directly to your wired Internet router, in most cases your television is not in the same room as the Internet connection making it necessary to have a wireless router to transmit the data wirelessly to your television. If you already have wireless in your home for a tablet or phone, you are all set.

When you get your streaming media device home, you simply plug it into the TV. Set the TV to the proper input like HDMI 1 or HDMI 2, then follow the set up instructions that will appear on the screen. All are easy to follow. The only thing you will need is to know the password for you wireless network if it is password protected.

After the setup you will see your choices of things to watch. Some of these will be free, some will have extra costs. For instance Netflix and Hulu both have a ton of content, but each charges about \$10 a month. Fortunately both have free trials which you can use.

Watching streaming media on your TV is not as simple as watching cable TV. There are little inconveniences. Every time you want to switch to your streaming device, you have to change the input on your television. Also there is no simple guide as the one you get with cable or satellite TV. You often have to search for what you want to watch. The Amazon Fire TV (not the Fire Stick) makes this easier because its remote has a voice search which works quite well. Just speak the name of a movie, actor, or director and it will find the movie you want. This, however, only works for Amazon Prime movies and shows. Also, if you have more than one subscription, you have to remember which movies are on which service....Now was Orange is the New Black on Netflix, Hulu, or Amazon?

Yet, the inconveniences are minor and there are advantages. For instance, after I started streaming I was able to watch the entire series of Downton Abbey on Amazon and House of Cards on Netflix at my convenience. How wonderful to watch a few episodes a week until I got caught up!

If you haven't yet tried streaming, be sure to check it out. You may find a new way of watching television that can save you money and give you new options.

President's Corner

The Times they are A-Chargin'

By Greg Skalka, President, Under the Computer Hood User Group, CA
February 2015 issue, Drive Light
www.uchug.org
president (at) uchug.org

I just want to say one word to you. Batteries.

In the 1967 movie "The Graduate", Dustin Hoffman's character was advised that plastics would be the future hot field. Today, I think the hot field to go into may be batteries. Modern technology is dominated by mobile and cordless electronics, which need batteries to supply their power. Cameras, smart phones, tablets, laptops, quadcopters, cordless tools and electric cars all depend on batteries for their primary power source. We probably don't realize, until the batteries go dead, how many of the products we use every day depend on batteries to run. That television on your wall (try using it for any length of time without a remote control), noise-canceling headphones on your head, wireless mouse in your hand, electronic safe in your closet, electronic safety light on your bike and Fitbit on your wrist all need batteries to run. So many other products, like your alarm clock, electronic thermostat and sprinkler timer, require batteries for backing up settings and timekeeping. We are awash in battery-powered products. Keeping all these batteries charged or changed presents a big challenge. And like plastics, they have the potential for harming our environment if not handled and disposed of properly.

Before we mastered electricity, our devices had to be human, animal, water or combustion-powered. Batteries actually predate the electrical grid; Alessandro Volta invented the first true battery in 1800. Early electrical innovations like the telegraph and electric lights were initially powered by batteries. It wasn't until the early 1900's that widespread commercial electrical power generation and distribution displaced batteries in most uses for electricity. Now with our thirst for mobile electronic devices and need for better energy storage, batteries are making a big comeback.

Battery technology has changed and improved over the years. Volta's zinc-copper voltaic pile has spawned zinc-carbon and alkaline single-use battery technologies, as well as many rechargeable battery types. New materials have increased the energy density and battery lifetimes for rechargeables. Nickel-cadmium (NiCd), nickel-metal hydride (NiMH), lithium, lithium ion (Li-ion) and lithium ion polymer batteries have allowed our portable devices to shrink in size and increase in capabilities. Batteries now come in many shapes and sizes, from tiny watch batteries to huge electric car battery packs. The standard AAA, AA, C, D and 9V cells have been supplemented with a multitude of custom sizes to suit new product applications, from large, high-capacity removable laptop batteries to super-thin, non-removable smart phone batteries.

Battery charging has become an important part of the life of every technology user. How long it takes dictates the time you and your cell phone must remain tethered to a wall outlet and determines when you may continue your electric car road trip. Higher capacity and the ability to swap batteries can help users, but eventually everyone must recharge. The most popular place in the airport terminal has become the seating next to the wall outlets. Unfortunately, every new electronic device adds another charging cable to your collection. The 5V USB socket has become the new charging standard for many devices. New upscale homes come with USB charging sockets built into the kitchen outlets; plug-in versions, like the Vivitar Home Charging Station, are also available.

No battery lasts forever. After many charge and discharge cycles, every rechargeable battery begins to lose its ability to hold a charge. Eventually it can hold so little energy that it is useless and must be replaced. For many products, battery replacement is very easy. Laptops and digital cameras have batteries that are easy to remove, and replacements are usually easy to find on the Internet. For other devices like tablets, smart phones and electric razors, changing the battery is much more difficult. Opening the device to get to the battery may be difficult and require special tools, and the battery is

sometimes soldered in. Special knowledge is usually required to open the device without damaging it. Sometimes the product can continue to be operated by using it with power cord (like my electric razor), or with an external battery (like my wife's iPhone with a Patriot Memory Fuel+ portable charger). Eventually it may get to the point where either the battery or the device must be replaced.

Fortunately, the Internet comes to the rescue again, not only to help locate a replacement battery, but also to provide the knowledge required to make the change. Lots of step by step instructions and how-to videos are available on YouTube and other sites to help disassemble almost any battery-powered device. Replacing the battery saves the consumer money, avoiding the purchase of a new product, while continued use of the device keeps it out of our landfills.

I recently had the batteries in two of my electronic devices go bad, requiring a change to continue using them. By doing some research on the web and spending around \$20 total on replacement batteries, I gave new life to these items while postponing having to spend the approximately \$120 in total to replace them.

An uninterruptible power supply, or UPS, is an almost essential accessory for a desktop computer. While a laptop's data is protected by a charged battery should line power fail while running with the ac adapter, you can lose data and risk hard drive corruption if a blackout occurs when using a desktop computer. A UPS contains a battery which is charged off the wall output and allows the computer and anything else plugged into it to run for a time if the ac is interrupted. The UPS typically monitors the battery's health and emits a loud tone when the battery is failing.

My desktop computer's UPS recently sounded its battery's death-call, so I shut it down and plugged the computer into a power so I could still run it while working on the UPS. I'd changed the battery before, and planned ahead by placing a label with the battery part number on the outside of the case. I found a replacement battery on Amazon for \$12; a new UPS of this capacity would cost \$40 to \$50. Once I'd received the new battery, I removed a couple screws on the back to release the cover and reveal the battery. The battery is connectorized, so changing it is easy, as long as you observe the polarity of the battery connections. Once it was reassembled, it worked as good as new.

My second battery change was a bit more difficult. My Braun Oral-B electric toothbrush had been having charging difficulties for quite some time. The internal battery had developed a memory from going through repeated short charge-discharge cycles, and no longer held much of a charge. Fully discharging it and recharging helped for a time, but it was finally getting to the point where it was essentially unusable. Since it charges inductively from its wall unit, there was no way to use it in a "corded" manner.

I searched the web and found www.fixit1stop.com had a repair video for my toothbrush. It showed how to disassemble the toothbrush and change the battery. This was considerably more involved than the UPS. The case had to be opened to expose the plastic frame containing the motor, circuit board, battery and inductive charging coil. The NiCd battery was soldered to the internal circuit board. Fortunately, I am an electrical engineer and have the skills and tools to perform the transplant. For those that don't, this web site not only sells replacement batteries (\$10 for my model's) but also provides a repair service (\$25 for mine). I couldn't find the correct battery anywhere else, so ordered it from this site. When it arrived, I performed the replacement per their web instructions and, after a night of charging, the toothbrush worked great.

Batteries contain hazardous materials and must be recycled or disposed of properly. In many places it may be illegal to send old batteries to the landfill. Once again the Internet can provide information on battery recycling in your area. It turns out rechargeable batteries are accepted for recycling for free at many Best Buy stores, including the ones near me. They have a bin just inside the entrance, where I was able to deposit my two old batteries. There were a lot of recycling options for rechargeable batteries in San Diego, but I didn't find any place that accepted single-use batteries without a fee.

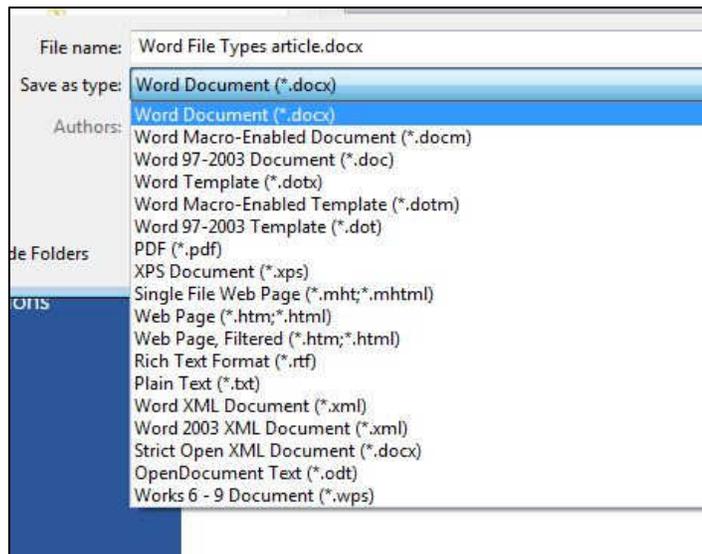
Batteries will continue to be an important part of our technology. To save money and the environment, consider changing the batteries in your electronic devices when they fail, rather than toss out the whole thing, and be sure to dispose of the old batteries properly.

When is a Word Document not a Document?

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When Word users type a document and save it, they usually don't pay attention to that 3 or 4 letter extension at the end of the file name which indicates the file type. Nor do they realize they can save that document as a different file type. Why would they want to do this? One reason is to ensure that the people they send the document to can open it. Read on for a few more reasons.

Windows 7 and 8 offer nearly 20 file types in which a document can be saved. To see this list, create a document and click File – Save As. When you get to the Save As dialog box, click the arrow next to “Save as type” to open the menu of Word file types, as shown below. It helps to get familiar with the few file types that home users may want to use in special situations.



File Type list in Word 2013

as shown below. It helps to get familiar with the few file types that home users may want to use in special situations.

New and Old Word: Let's begin with the incompatibilities between new and old versions of Word. Word 2003 and earlier versions used the **.doc** extension as the default for documents. Word 2007 and later versions use **.docx**. The rule is, newer versions of Word can open older documents, but older versions of Word can't open newer documents. If you have Office 2013 and try to send a document email attachment to a friend with Office 2003, he will only be able to open your **.docx** if he has installed the free Microsoft Office Compatibility Pack from the microsoft.com download center. If he sends you a **.doc**, you can open it, but it opens in “compatibility mode,” which

prevents you from using some of the features of your Word version until you convert it to a **.docx** (File – Convert). These are frustrating situations, but you can solve your problem by saving a copy of your document as a **.doc** before you send it.

Sharing Documents with People without Word: A few file types are helpful if you want to create a document that can be read both by Word users and those who do not have any version of Word. Rich Text Format (**.rtf**) can be read by almost any word-processing program and several operating systems. This is a good sending option if you don't know what word-processing program a person uses. Another option is to compose your document in WordPad, a stripped down version of Word found on all Windows computers. Its default file type is **.rtf**.

Open Office compatibility: Word offers one file extension, **.odt**, OpenDocument Text, to enhance its compatibility with the popular free office suites, Open Office Writer, Google Docs and other open source applications. If you receive a document in **.odt** format, Word will let you open and save it, although the formatting may differ a bit from the original. If you send a Word document to an Open Office user, choosing the **.odt** file type will ensure it will arrive looking the way you intended.

Templates: Changing the file type also comes in handy if you use Word templates. A template is a preformatted document in which content can be customized and saved, leaving the template unchanged and ready for later use, as in the case with forms, resumes or flyers. Word has many templates built in or downloadable from within Word. You can modify a template from the gallery or create your own and save it with the template extension, **.dot** or **.dotx**, which makes it reusable.

Plain Text: The plainest and therefore most versatile of all the file types is **.txt**, Text format. It used to be called “flatfile” because of its lack of formatting and simple text. Often if you have a typed “chat” with a tech support person online and save the chat for future reference, it will be in **.txt**. You get no fancy formatting, but readable text.

Portable Document Format: By saving a document as a **.pdf**, you preserve all formatting, text, and graphics, making it unable to be edited without special software. Adobe, which established the standard for this format, offers Adobe Reader (free) for viewing and saving **.pdf** documents and Adobe Acrobat (\$110 - \$500) for creating them. Office 2007 introduced **.pdf** as a saving option for Word, Excel and PowerPoint. Word 2013 has recently added the ability not only to save a document in **.pdf**, but also to open a **.pdf** as an editable Word document. Microsoft adds a disclaimer that the result might not look exactly like the original, but the text will be intact. In my trials, I found the formatting to be quite close to the original, especially for short documents with a minimum of graphics.

Word 2013 has recently added the ability to open a .pdf as an editable Word document.

One last tip: Always save your document as a **.docx** or **.doc** first, before changing the file type. That way you will always be compatible with your own documents.

Practice Makes Perfect

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Learning to use a new device can take time because it always takes practice. Sometimes that practice requires trial and error. So here are some tips to get you through.

Trial and error can be frustrating. For instance when working with Siri, Google Now, or Cortana, you might have to try several different ways of saying things to find the one that is understood the best. For instance, if Siri is giving me directions and I want her to stop, I have to say “end navigation”. She simply doesn’t understand other similar command like “stop navigating”. Not only do you have to try different things, but you also have to remember which one worked.

This is a great exercise for your mind, but if you don’t want to give your brain too much of a workout, you can always jot down the commands to help you remember. Whatever you do, don’t get frustrated, everyone has to do this with new devices.
