Next Event: Tuesday, July 11

Using the iPad with a person living with Dementia

Directors' Notes

Danbury Area Computer Society (DACS)
Board Meeting Minutes
Wednesday, June 7, 2017

The meeting was called to order at 7:04 pm by the DACS President, Dave Green.

In attendance were Board members Richard Corzo, Dick Gingras, Dave Green (President), and Andy Woodruff. Bert Goff was not present. The minutes were taken by Richard Teasdale.

(Names in italics denote responsibilities for actions.)

• The Minutes of the 5/3/2017 Board Meeting were accepted.

Reports

- The Treasurer's report for May was discussed. Bert reported by e-mail that year-to-date, receipts were still exactly the same as for the corresponding period last year. However, 15 members are in arrears. Liquid assets currently exceed prepaid dues by about $1,400.
- The Membership report was received from Jim Scheef by e-mail.

  o 93 paid-up members (including 6 new), and 9 in-grace, for a total of 102.

  o 27 people attended the June 6 General Meeting.

  o The usefulness and value of the DACS membership of Meetup were discussed.

  o No information was available about how visitors heard of the meeting, e.g. via Meetup. Andy reiterated that this information should be collected, and will contact Jim about it.

• Press Coverage:

o Dave reported that the press release for the June General Meeting was sent out to the usual recipients on about May 22. Copies of the press release were also sent to two local camera clubs.

• Website:

o Richard reported on the recent outage of the website. The main site and the CiviCRM site were down for about 2 days and new malware files were discovered. Several restores of the site plus a reinstallation of Wordpress were needed to get it working again. The method by which the sites were attacked remains unknown. Various possibilities were discussed.

o A Wordpress plug-in has been installed to automatically send to Twitter any new posts to the website.

Old Business

• Programs:

o The talk given by Mark Weiss and Andy at the June general meeting was discussed and reviewed.

o Ed Fitzgerald will speak at the July general meeting, on the subject of Using an iPad with someone who has dementia.

• Preview: *Richard Teasdale*.

• Review: *Dave Green* will identify someone to write the review.

o *Richard* will contact Tom Osbeck, a former President of the Westchester PC Users Group, to determine whether the person who addressed that group about artificial intelligence could speak at the August (or another) general meeting.

o Andy has arranged for Shannon Calvert, of the Westport Astronomical Society, to speak about astrophotography at the September general meeting.

o Andy is in communication with John Patrick, who may speak about home automation at the November general meeting.

o The board discussed the pros and cons of more coordination with other computer clubs in finding program speakers.

• Members Directory:

o Richard reported on the discussion at the May meeting of the Membership committee. Options discussed included the use of a plug-in or custom coding on the CiviCRM website, to permit members to contact each other and share information about their interests, without having to disclose e-mail or phone details.

DACS, its officers and directors assume no liability for damages arising out of the publication or non-publication of any article, advertisement, or other item in this newsletter.

The editors welcome submissions from DACS members. Contact Richard Teasdale (*dacseditor*@dacs.org). Advertisers, contact Charles Bovaird at (203) 792-7881 *(aam@mags.net)*

Dick Gingras   APCUG Liaison
rgingras@dacs.org

HelpLine

Our former telephone HelpLine has been replaced by our web-based DACS Community Forum at *http://forum.dacs.org*. We have topic-specific forums where DACS members can post questions. Questions may be answered by Workshop leaders or other DACS members. If none of the categories fit your question, just post it to the Ask DACS forum.

Topic	Forum
Linux	Linux Workshop
Desktop publishing and website design	Web Site Design Workshop
Mac and iPhone/iPad/iPod touch	Apple Workshop
Online/small business	Online Business
Single board computers	Single Board Computers
Smartphones & Tablets	Mobile Devices Workshop
Social media	Social Media
Video capture/processing	Video
Windows	Windows Workshop

Another possibility, with similar functionality, was Meetup. Pros and cons of each solution were discussed. The question was raised whether APCUG has anything to offer, whereupon the board agreed to defer any decision until after speaking with Sam Wexler (see below).

- Renovation of the Resource Center (RC):
   o No donation of used carpeting has been received from Meadow Ridge Senior Living Community in Redding.
   o Dick will contact Bruce Tuomala about other possible sources of used carpet.
   o Andy has found a source of several used chairs and two used tables for the RC at no cost. The board authorized him to rent a U-Haul truck to bring them to the RC.

New Business
- The July board meeting was rescheduled to Wednesday, June 28th, to avoid scheduling conflicts in the month of July.
- The board decided to invite Sam Wexler, from the Board of Advisors of APCUG, to an upcoming board meeting, to hear suggestions from him for improving membership.
- Snacks for General Meetings:
   o *Richard* (snacks) and *Richard Teasdale* (drinks) will make the arrangements in July.

The meeting was adjourned at 9:04 pm.

—*Richard Teasdale*

Membership has its Privileges!

Become a member and support DACS. Each member has access to the Community Forum, where they can post questions, the online newsletter in PDF form, group related news via email, SIG meetings, online forums, and any group-only related events, promotions, or activities. There is also an option to receive a mailed newsletter. For information on how to join DACS, *http://dacs.org/joining-dacs/*.

July Meeting Preview

Using the iPad with a person living with Dementia

Preview by Richard Teasdale

Date: Tuesday, July 11, 7:30 p.m.
Location: Danbury Hospital Auditorium
Presenter: Ed Fitzgerald

AT THE DACS July General Meeting, Ed Fitzgerald, digital marketing and technology consultant to small businesses, and a former DACS member, will speak on the subject of using the iPad with a person living with Dementia.

Ed will describe the approach he developed to using the iPad after his wife, Diane, was diagnosed with Frontotemporal degeneration, a dementia that produces "gradual, progressive decline in behavior and/or language." His goals were simple: Find a way to engage her in activities so they could enjoy their time together, stimulate her mind, elicit a response from her, get her to smile, laugh, bring her out of her shell and create moments of joy.

Dementia is a very big and growing problem, not only in the United States but worldwide. While Alzheimer's Disease is the most well-known and the most prevalent form of dementia, there are various other kinds recognized by the medical profession - frontotemporal degeneration is a leading one. The scale of the dementia problem is staggering - according to Alzheimer's Association statistics, Medicare and Medicaid spend in excess of $150 billion yearly for health care, long-term care, and hospice care of patients with dementia. But the majority of dementia care is delivered at home by family members, so the total, real cost is incalculable.

According to research conducted by the RAND Corporation, the total cost of dementia care in the U.S. will double by 2040.

Ed's presentation will focus on how home-based care givers can use technology to better communicate with loved ones who are suffering from dementia.

Ed will talk about how he started with his desktop, then laptop and his realization that the mouse and keyboard approach would not work. His research discovered that some assisted living facilities had begun to use the iPad. Starting with a set of five apps, Ed created a home screen of activities combining apps, links, games, videos, pictures and more.

They include an app to create and decorate pottery, a drawing app where Ed draws stick figures of the grandkids and adds messages from Grandma and then emails then to the kids, a garden app where they grow flowers, cut them into a bouquet and email them to family members with a note attached, entertainment apps that go back in time, like YouTube videos of Carol Burnett shows, Diane's favorite music, podcasts of a favorite NPR show, *Wait, Wait, Don't Tell Me*, and books she can listen to from Audible.com. They use FaceTime to talk with other family members.

Ed uses the iPad as well, during visits at the assisted living facility where his wife resides, to keep himself occupied, giving them something to do together and extending the visits.

The presentation will also suggest ways that an iPad can be used by recreational therapists and other staff members of assisted living facilities.

DACS General Meetings are free and open to the public. Members and prior attendees are encouraged to extend invitations to anyone interested in this topic.

DACS holds its general meetings at Danbury Hospital, most often in the Creasy Auditorium, but occasionally in the Robilotti Conference Center across the hall from the auditorium. There is plenty of free parking in the Rizzo guest parking garage adjacent to the auditorium. (Go to https://dacs.org to find directions and parking information).

Special note: General Meetings are normally held on the first Tuesday of each month. In July, the meeting will take place on the *second* Tuesday: July 11th.

Back to Basics

Using Windows (File) Explorer -- Deleting Multiple Files at One Time

By Jim Cerny

[*Note: Please read this article with your computer! DO the steps and you will find it all much easier to understand. Otherwise you will forget. Trust me on this.*]

THIS IS THE FOURTH, and last, of a series of articles on the basic use of Windows Explorer (known as File Explorer in Windows 10). In the previous articles, we looked at the basic window layout when you open this app or program and we also talked about the two "panes" in this app window - the "Folder List" in the left pane, and the contents of a folder
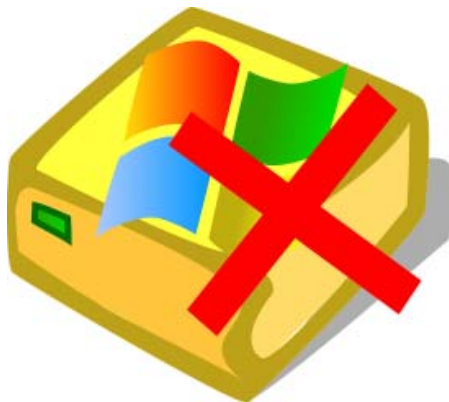
displayed in the right pane. Clicking on any folder on the left will show the contents of that folder on the right. In the second article we looked at the different VIEWS you can use in Windows/File Explorer and why I recommended the "Large thumbnail" view for pictures and the "Details" or "Detailed List" view for all other files. In the third article we looked at selecting files for some action, such as to move them, copy them, or delete them. In this article we will learn how to work with MULTIPLE files at one time.

Open the Windows File Explorer app or program and find "Documents" (or "My documents") in the left pane and click on it once with your mouse to open the contents of the Documents folder in the right pane. You should be saving all your documents and most files here. To SELECT a file for some action, left-click on it once in the right pane and the file name should be highlighted. (NOTE: If you double-click on the file name your computer will try to OPEN that file using your computer's default program or app for that file type). When people say "click" using the mouse, they always mean a LEFT-click. A "right-

click" of the mouse is specifically stated as a RIGHT-click.

Selecting for Action

One of the computer skills that is so very helpful in many different apps is the way to SELECT something for some ACTION. This is a two-step process that allows you to work with files, photographs, emails, menus, and so much more. To select a single file in Windows File Explorer, you simply click (that's a left-click) once on the file name to highlight it. But how do you select MULTIPLE files at one time? Well, there are TWO easy ways and both ways are helpful.

Using the SHIFT key on your keyboard - After you click on the first file, move your mouse to another file in the list and, while holding down the SHIFT key, click on another file name. Presto, ALL the files between have been highlighted! Now if you click on "delete" ALL the highlighted files will be deleted. Did you make a mistake and select too few or too many files? No problem, just click anywhere and the highlight will disappear and you can try again. This is a great way to select multiple contiguous files.

Using the CTRL key on your keyboard - After you click on the first file, hold down the CTRL (control) key and click on any other file names. Every file you click on will be selected or highlighted. This is a great way to select many files that are NOT listed together. Do not let up on the CTRL key until you have completed your selections. If you make a mistake, clicking on a file that was already selected will "un-select" the file. And again, if you have made any mistakes, just remove your finger from the CTRL key and click your mouse on any file name, your highlighted list will go away and you can start over.

Practice these keystrokes a couple of times to get used to it. Naturally if you do not click on "delete", no files will be deleted.

Here are some more useful tips:

• Do not delete too many files at one time, start with just a few until you get used to it, then go for more.

• The scrollbars should still work, so if you need to select multiple files above or below your first file, you can use the

scrollbars to get elsewhere in your list. Clicking on a scrollbar will not change your selections.

• Select all your files from ONE folder at a time. There may be a way to select files from different folders at one time, but I strongly advise against that if it is possible. You will get too confused.

• Don't forget you can select a FOLDER as you would a single file. If you move or delete a folder, ALL files and folders IN that folder will be moved to the new (destination) location (folder) or deleted.

• Yes, you CAN select multiple FOLDERS the same way as you select multiple FILES. You can even select files and folders in the same selection. This is really super-helpful. The computer assumes you know what you are doing, so be careful. This is a great way to copy your stuff to another memory device as a backup.

• Remember, files deleted from your "C" drive will go to your Recycle Bin folder, but files you delete from other drives (such as a plug-in drive or memory card) will NOT appear in your recycle bin, they will be really deleted.

• Read the box notices that appear to make SURE you are moving or deleting the correct number of files and, if moving them, that they are going into the proper folder.

Finally, this method of multiple selection comes in very handy in many other computer applications, such as email. You may have to "select" an item by clicking in a box or circle, but there will be a way to do it. If in doubt, ASK GOOGLE - "How do I delete multiple emails in gmail?" is a good example. Google always loves questions!

JIM CERNY *is Chairman, Forums Committee, Sarasota Technology UG, Florida (www.thestug.org; jimcerny123 (at) gmail.com).*

This article appeared in the October 2016 issue, Sarasota Technology Monitor, and is reprinted by permission for APCUG member groups.

Workshops

Workshop Notes: July 2017

Apple. Focuses on all aspects of the Mac and iPhone operating systems.
> **Contact:** Richard Corzo (*applesig@dacs.org*).
> Meets 2nd Tuesday, 7 p.m. at DACS Resource Center.
> **Next Meeting:** Aug 8

Jobs. Networking and jobs search
> **Contact:** Charles Bovaird, 203-792-7881 (*aam@mags.net*). Go to DACS Community Forum (*http://forum.dacs.org) for job listings.*

Linux. Helps in installing and maintaining the Linux operating system. Also of interest to Apple owners using OS X.
> **Contact:** Dave Mawdsley, *linuxsig@dacs.org*
> Meets 3rd Wednesday, 7:30 p.m. at the DACS Resource Center.
> **Next Meeting:** July 19

PC Maintenance. Review of PC hardware and OpSys maintenance and use.
> **Contact:** Charles Bovaird, 203-792-7881 (*aam@mags.net*). Go to DACS Community Forum (*http://forum.dacs.org*).

Online Business Workshop. Informal member gathering sharing ideas on creating an online source of income.
> **Contact:** Steve Harkness (*onlinebizsig@dacs.org*)
> Meets second Monday in Brookfield, or by Webinar.
> **Next Meeting:** Check *dacs.org*.

Single Board Computers Workshop. Explores small cheap computers like Raspberry Pi, Arduino, Netduino, Beaglebone, and more. Meets at 7:00 p.m on the 3rd Thursday at the DACS Resource Center.
> **Contact:** Jim Scheef (860-355-0034)
> **Next Meeting:** July 20

Video Production. The Video Workshop explores all aspects of video capture and production, including both inexpensive and professional choices for cameras and editing software.
> Meets on the 3rd Thursday of certain months, typically at 7:00 pm at the Resource Center. Check the Calendar for details.
> **Contact:** Andy Woodruff (awoodruff@dacs.org)
> **Next meeting:** Check dacs.org

Web Development/Design Web Development/Design This workshop is looking for a new moderator. Being a workshop leader is a great way to share information, learn new techniques, promote your business, and interact with like-minded people. Extensive web knowledge is not required, but a willingness to open a topic for discussion and enjoy the contributions and feedback from the attendees. Meets every 3rd Tuesday of the month, but repeating date can be changed if needed.

Contact *avanommeren@dacs.org,* or *webmaster@dacs.org* for details.
> **Next meeting:** TBA–Look for updates

Let's join heads!

Do you have a special technology interest you would like to share or learn more about? Join a DACS workshop or start one. You don't have to be a nerd or a guru—just have a curiosity for what's out there and an interest in sharing or discov-ering with others like you. Just send an e-mail to *dacsprez@dacs.org,* or talk to one of our officers at the next meeting, and say something like "I want to start a workshop!" or "Wouldn't it be nice if we had a workshop on . . .?"

July 2017
Danbury Area Computer Society

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1
2	*3*	*4*	*5*	*6*	*7*	*8*
9	*10*	*11* **General Meeting** 7:30 PM **Apple Cancelled**	*12* **Board of Directors** 7:00 PM **Cancelled**	*13* **Membership Committee** 7:00 PM Jim Scheef 860-355-0034	*14*	*15* **DACS.DOC Deadline**
16	*17*	*18* **Web Development and Design** Annette van Ommeren 7:00 - 9:00 PM *avanommeren@dacs.org* **No Meeting Looking for Leader**	*19* **Linux** 7:30 PM Dave Mawdsley *linuxsig@dacs.org*	*20* **Single Board Computers Workshop** 7:00 PM Jim Scheef 860-355-0034	*21*	*22*
23	*24*	*25*	*26*	*27*	*28*	*29*
30	*31*					

Disaster Avoidance

Rational Backup Strategy

Dick Maybach

IN DEVELOPING A PLAN to defend the loss of data and software from operator, hardware and software failures and malicious acts, it's important to take a systematic approach rather than responding to the latest sensational article or alarming ad. Your first step should be to identify the threats. Otherwise, you could end up with a Maginot Line—an expensive defense against an attack that didn't occur and was ineffective against the one that did.

Common threats to PCs and the information they hold include the following:

• Operator errors are common. You mistakenly delete a file, a directory, or an entire partition. If this involves your software, it may disable the PC.

• Software sometimes contains coding errors that create problems, which if serious enough can crash the operating system. Simply repairing the resulting damage doesn't cure the root cause. However, often symptoms appear only under rare conditions, which means you can only repair the damage and hope these don't recur.

• Hardware malfunction often immediately disables the PC, and the solution is to repair the failure and then restore any damaged data. Some problems, such as intermittent RAM failure can be difficult to identify and may require a visit to the shop. Disk failure is common and this requires replacement of the disk and then restoration of the software and data it held.

• Malware is software that is designed to cause damage. Individual programs acquire colorful names, such as virus, ransomware, rootkit, and Trojan horse. Each newly discovered name results in a new commotion, but the remedy is the same for all - remove the malware and then repair the damage. A worry here is that the malware may reside for some time before damage appears, so that you back up the problem as well as your software and when you restore from a backup, you also restore the malware.

• PC loss can occur when traveling with a laptop or when one fails to the extent that repair isn't economically practical. You must replace not only the hardware, but any original equipment manufacturer (OEM) software that is licensed only for the lost machine. You can restore only your data from backup.

• Environmental catastrophe most commonly results from burglary, fire, storm, or flood. Here you lose not only the PC, but perhaps all the material associated with it, including documentation and backup media. At some level, perhaps nuclear holocaust or asteroid strike, you probably decide you don't care as the loss associated with your PC is trivial compared to other damage.

You will surely find that no single approach will protect against all of these, and you may decide to ignore some threats.

You have two software and data repair approaches: reinstall from the original sources or recover from a snapshot of your disk taken previously. Only the latter is possible with data; the receipts needed to recreate your 2012 tax return are long gone, as are the vacation photos on your camera's SD card. However, with software, you have choices:

1. Use the original distribution media to create a fresh installation, configure it, and apply any updates for the OS and all the applications. This is tedious, but the result is a clean system, free of whatever problem (assuming it's not with your hardware) that corrupted your system. Most PCs are delivered with the operating system already on the disk and without its installation media; they have instructions on how to create a repair disk, although you may have to dig to find them. Most also have a recovery partition on the disk that you can use to recreate the initial configuration. In my experience, the hard disk is the PC component most likely to fail, which of course makes the recovery partition unavailable. The software supplied with a PC is almost certainly sold as OEM products, which means it is licensed only for that hardware, and it often includes feature to prevent it from being used elsewhere. As a result, you need a separate set of recovery media for each PC, and you need to be able to identify to which hardware each set belongs.

2. Recovering the software from a backup is far simpler, because it restores all the software in one step, which has already been configured and updated. However, if the failure was the result of a developing software problem, you also install its root cause. For this reason, many keep backups made at different times, hoping that if they go back far enough, they'll find a clean one. Of course, when you restore an old backup, you most likely also restore your old data, destroying any acquired since. Your recovery plan must include a remedy for this.

There are several choices of backup media:
1. a backup directory on your system disk,
2. a backup partition on your system disk,
3. a separate internal backup hard disk,
4. an external backup disk, and
5. a cloud service.

Only hard disks and cloud services have the capacity to back up modern disks. Optical media capacities have not kept up with those of hard disks, and far too much of it has poor reliability. Cloud service adds security concerns, both because your data travels over the Internet and because you have entrusted it to an outside entity.

As with the backup medium, you have choices about what to back up. These include:

1. a complete disk image,
2. all the data files in the home directory, and
3. only those data files in the home

directory that have changed since the last backup.

Some strategies include backing those OS and application files that have changed, but this can be risky, as these often depend on each other. If you replace a file but not something with which it interacts, the result can be an inoperable system. With software, it's safer to replace everything.

Some backup program developers recommend that your PC have constant access to the backup medium. While this insures that all your data is backed up as soon as its created, it also insures that malware also always has access to the backup. This is a good scheme for protecting against operator error, but less so for protecting against malware and software errors. For the latter, you want your backup medium to be accessible for only very short periods of time. You may decide to use two methods, one that backs up continually to protect against operator error, which are common, and a second that backs up only periodically to protect against such threats as malware.

Backup software is a poor area in which to experiment. Obtain it from well-known vendors with good reputations. Consider only products with favorable reviews from responsible experts. Microsoft includes a suite of recovery software with its operating systems, and you should have a good reason for using something different. I discussed their Windows 7 version of this in the February 2012 issue of BCUG Bytes and the Windows 10 version in the May 2016 issued, available at www.bcug.com. =

After obtaining your choice, test it as best you are able. For a thorough test, you would have to erase your disk and restore a backup, but don't do this. Instead, make a copy of just one file or directory; then backup, delete, and restore it. Compare the original and restored versions. If the recovery software includes a bootable disk, test it on the PC where you will use it to be sure it does boot. This will probably require that you make some changes in your BIOS. Record these before you change them back, as frequently, the BIOS settings must be different for internal disks and external media. You may also wish to obtain and test a reliable repair utility disk. If you suspect a virus infection, you can boot with it and the virus won't be active. This will allow you to copy your

data files to an external drive without its interference. I discussed some of these tools in articles in the April, June, July, and August 2012 issues of Bytes.

My strategy is that every week I have a scheduled backup of all the data files that have changed since the previous backup. This is to an internal hard drive, separate from my system and data drives. As a result, I limit my loss from most causes to the data I generate in one week. Once a month, or when I think of it, I back up to an external hard disk, all the data files that have changed since my last external backup. My operating system is Linux, and I have its installation USB memory stick. Almost all my applications are available from the distribution's repositories. As a result, it's convenient to restore all my software as a fresh install, and I do this every two years, even if I have no problems, just to clean out the accumulated cruft. Reviewing this plan against my list of threats, we see the following:

• An operator error can destroy at most a week's work.

• Similarly, most software errors and hardware failure can delete up to weeks of work. Although if one affects both the service and the on-line backup disk, I could lose up to a month's worth, but this is very rare.

• Malware could cost me up to a month, if it affects all the disks. But malware in Linux is uncommon and, so far, I not had this problem.

• Although I do have a laptop, I transfer any data to my desktop as soon as I get home. As a result, losing it would lose only the data acquired on that trip.

• The weak point in my plan is environmental catastrophe, as all my PC gear resides in one room, and I could lose all of it in one incident. I could improve by adding a backup file server to our home network and locating it in the basement or better by storing a backup drive at a neighbor's or in my bank deposit box or using a cloud storage service.

• You should make a similar assessment of your backup plan against your own list of threats to see if it needs adjustment.

Your recovery approach of course depends on what is damaged. Your data resides in what is often called the home directory, and this can be restored only from a data backup. However, Windows may store some of your data (such as Internet favorites and e-mail data) in the system area, and recovering them requires a system restore. The operating system and applications reside in what's known as the system area. They can be recovered by restoring a system backup or by making a fresh install from the original distribution media.

If you use Microsoft's backup software, system backups are in the form of full disk

images. If your system won't boot, it may be because the boot loader, or in new PCs the UEFI partition, has been damaged. These can be repaired in Windows system using the Windows recovery disk. See the MS Website for instructions. If the BIOS ROM is corrupted, a competent shop may be able to help, but you may have to return the machine its manufacturer.

How you recover depends of course on how you backed up:

1. The fastest is to restore from backup as the result will be software that is updated the last version of your data. If this includes restoring the OS, you must be able to boot from live media, which means you have to properly set up your BIOS. Later PCs use UEFI, which adds complexity.

2. If you decide to re-install the OS you can try to restore from the PC vendor's recovery partition, which places your computer to its state when you first purchased it. You will have to reinstall all your applications from their distribution disks and your data from a recent backup.

3. If the recovery partition isn't available, you'll have to use the OS distribution disk if you purchased it separately or its recovery disks if the OS was installed by the PC vendor. (This of course assumes you created these.)

4. As a last resort, if the former isn't possible or if you doubt your abilities you can take your PC back to the vendor who sold it to you or to an independent shop to have the OS re-installed. You then must restore any applications and your data yourself. It should be clear that record-keeping is a very important component of your plan. In particular, be sure to label your external backup media and any notes. You don't want to restore from the wrong computer.

Creating and following a good backup discipline require more than trivial knowledge, thought, and time. Many computer owners choose to take a "Do nothing and hope for the best" approach or they follow the advice in the latest article or ad they've read, and neither approach is sound. As a last resort, there are commercial firms that will attempt to recover data from damaged or corrupted storage media, but the results aren't certain and the costs are high (up to multiple thousands of dollars).

Dick Maybach *is a member, Brookdale Computer Users' Group, NJ (www.bcug.com; n2nd (at) att.net).*

Back to Basics

Rooting and Custom ROM Installation of Kindle Fire HD 2nd Edition

By Bob Woods

WE LIKE TO HAVE A RADIO tuned to a talk radio station or music station during the day. Our location is in a town in a valley surrounded by mountains, so our radio reception is poor. As a solution, we have been using a couple of older Kindle Fire HD 2nd generation tablets streaming our favorite stations via iHeart radio. Recently, one of the Kindles started having connectivity issues and was replaced with one of the newer $50 Kindle Fire HD tablets. Since the problematic unit was not being used for anything I decided I would try replacing the Amazon tweaked version of Android with a standard version. I wasn't worried about ending up with a brick - as the unit is four years old, so not in warranty, and was no longer in use anyway.

The files listed and the following steps are intended for the Kindle Fire HD 2nd edition. They will not work on other manufacturers devices or even different models from the same manufacturer. The steps will be pretty much the same, but you will have to conduct an internet search with your models OS version to get the correct files and any step differences for your device. There are no guarantees that you will not experience any issues. That being said, lets jump into the thick of it.

First, I set the Kindle back to factory defaults. Since I will be replacing the Amazon OS with a standard version of Android I not register the unit. I also logged onto my Amazon account and de-registered the device. Next, onto the internet with multiple Google sessions looking up what was needed.

The first thing I found was the unit needed to be Rooted. This is to allow root access rights to the operating system. On units with proprietary operating systems, like the Kindle or phones tied to a particular service provider, root access is blocked by their version of the operating system. Rooting the unit is done via a root kit, which is an app that has been created specifically to give root access to a specific version of the installed operating system. This required using the Kindles settings setup to obtain its version of the operating system. Then do a Google search to look for the root kit. In my case the search term was "Root Kindle Fire HD OS 7.5.1". What I found was a YouTube video from Tekify with step by step instructions and links to the required software. It also had a link to written instructions.

There are two methods for installation. One with a PC to download, save and run files to do the actual root to the Kindle via USB. And one without a PC where you use the Kindle's browser to download, save and run the files directly. Since I was having Wi-Fi connectivity issues with the Kindle I opted for the method with the PC.

Following the video instructions:
• On your device go into settings (Swipe down from the top and press more) then scroll to "Security". Set enable ADB to on and press 'Ok' on the warning. Go home on your device, make sure your kindle is NOT connected to the computer yet.
• Download the Tekify - Root Kindle Fire HD .zip file on to your computer and extract it.
• In the extracted folder, you will find another folder and a file named "KindleDrivers", double click this file and

press install, when another window pops up press next and wait for the install to complete, once it is done you can click finish and close out the remaining window. Your computer is now ready to use ADB and Fastboot.
• Once again in the extracted folder open the folder named "Root_with_Restore_by_Bin4ry_v33". inside is a number of items. Double click "RunMe" (not the .sh file) and a command prompt will open.
• Plug your Kindle into the computer with a USB cable and press 3 on your keyboard followed by enter.
• After a bit of script has run a message asking you to restore your data will appear on your Kindle, click "Restore my data", don't worry this will do nothing.
• 10 Seconds later your device will reboot. Once it has booted up the lockscreen will be black and your device will be slow, this is normal.
• Once your computer recognizes the device again some more script will run and the window will close. Your device will also reboot one last time.
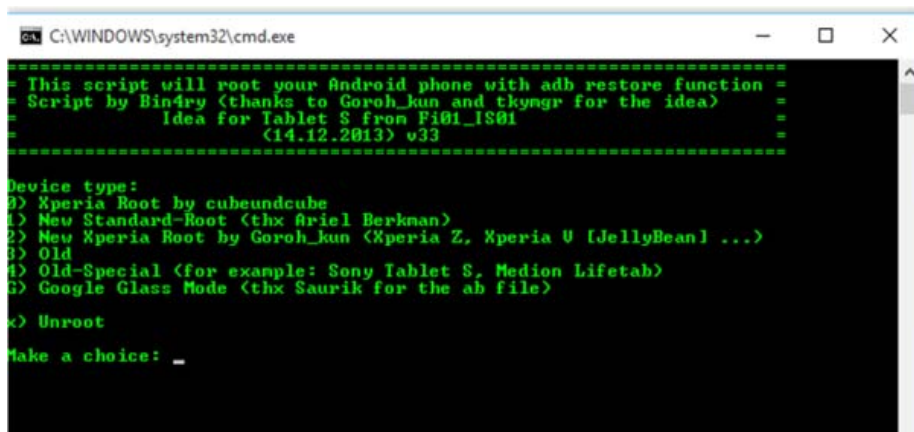• When your device is booted up you will have Root as well as an app called SuperUser installed.

At this point the Kindle is Rooted. However, the Amazon OS is still on the Kindle. To replace it would require two things:

1. A backup and recovery application that sets outside of the OS and can be called up at bootup. Think of this as the equivalent of using the function key to get to a Boot Menu on a PC to boot from a USB or DVD drive. This is the only way to be able to replace the OS as Android devices always boot directly to the OS.

2. A custom ROM to replace the Amazon Kindle OS. In the Android world a ROM is not a physical device, Read Only Memory. It is a software package of a version of Android custom configured to be compatible with your hardware. It will be close to stock Android, but usually has some additional features. I found there are different custom ROM builds, each with slightly different extra features over plain vanilla Android. The choice is up to you.

For the backup/recovery program I installed an open source program called TWRP (Team Win Recovery Program). For the ROM I settled on Omni 5.1 which is Android Lollipop 5.1.1. I could have gone with Android Marshmallow 6.1 from Cyanogen, but the Kindle ROM version was an unofficial beta version (CyanogenMod 13).

The instructions for installation of TWRP are at Tekify at http://www.tekify.co.uk/kindle-fire-hd/recovery/. Not wanting to use the Kindle WiFi I again

downloaded the three files listed below from the URL links in the instructions and transferred them to the Kindle download folder via USB. These would then be run directly on the kindle. The below instructions are shown in the YouTube video, but since it is easy to brick the Kindle during this process, I wanted to follow the written instructions (also listed) after watching the video.

• On the Kindle, enable Installation of Applications from Unknown Sources. (Settings > Device > Allow Installation of Applications).

• Download the three files onto your device: FireFlash.apk, KFHD7 Freedom Boot.img and either KFHD7 TWRP 2.7.0.0.img or KFHD7 TWRP 2.8.3.0.img (It doesn't matter which one however 2.8.3.0 is obviously the latest version). As before, I downloaded the three files onto my PC and transferred them to the Kindle via USB.

• The rest of the steps for TWRP are then done on the Kindle.

• Install FireFlash.apk and open it up.

• Grant the app Root Access, if necessary.
    o Under the 'Bootloader' heading tick the 'Flash kfhd7-u-boot-prod-7.2.3.bin'. This is required or your device will be bricked.
    o Under 'Boot Partition' click 'Not Flashed' and find where you downloaded the files.
    o Select 'kfhd7-freedom-boot-7.4.6.img' (This is the correct one even though we are on a later version).
    o Still under the 'Boot Partition' heading tick 'Apply Stack Override'.
    o Under the heading 'Recovery Partition' once again click 'Not Flashed'.
    o This time select the other file ('kfhd7-twrp-2.7.0.0-recovery.img' the number will be different depending which version of TWRP you downloaded).
    o Make sure to tick 'Disable Recovery Auto Update' .
    o Now at the bottom under the heading 'Execute' press 'Flash, Install Script'
    o Once this has finished (DO NOT CANCEL IT) tap 'Reboot Into Recovery' and wait for your device to boot into TWRP.

• I would strongly recommend making a backup once in TWRP.

• Finally, you can boot into TWRP any time from a powered off state by pressing the 'Powr Button' as normal and then holding just the volume up button until you enter recovery.

Now for the ROM.

Omni 5.1 is a ROM is based on CM12 (Cyanogen Mod 12) however is modified to suit the Kindle Fire HD. Make sure you have at least 70% battery. As a quick warn-

ing do not try to overclock the CPU on this ROM as it will cause your device to totally freeze up after a couple of minutes of use. Once again, the instructions are on Tekify at *https://www.youtube.com/watch?v=_ c5hHSCO_o8* .

• Download the Omni 5.1 ROM, Gapps for 5.0 and Update SuperSU onto your device. once again, I downloaded to my PC

• The rest of the instructions are done on the Kindle.

• Reboot into the TWRP Backup/Recovery app.
    o This is done by first, completely shutting down the Kindle (push and hold the power until you get the shutdown button and touch it).
    o Then push the power button to boot up. When the Kindle Fire logo shows, push and hold the left volume button (volume up) until the word Fire turns blue and let go of the volume up button after a second or two.
    o The Kindle will open in the TWRP application. The TRWP home screen looks like the following image. The video shows the other screens in TWRP you will be dealing with.

• Make a backup using the default settings just in case something goes wrong and you need to restore to a previous state.

• After the backup, click 'Wipe' and swipe to factory reset. This MUST be done or you will have problems later. This does not wipe your Internal Storage don't worry.

• Then press 'Install' and navigate to the folder where you downloaded the Omni 5.1 ROM and tap it.

• Swipe to confirm flash, this will take a while DO NOT cancel.

• After it is done DON'T press reboot system or you will have no Google Apps and you will experience errors.

• Click 'Home' and then once again 'In• Select the 'gapps 5.0? file and once again wait. Once again go 'Home' otherwise you will not have root access.

• Click 'Home' and then 'Install' for the final time.

• Select Update SuperSU.zip and press reboot system once it is done flashing.

• First boot up may take a while. However, if it takes more than 10 minutes hold the power button till your device goes off and try turning it on again. From the video we learned that after a ROM replacement you can get into a boot loop, but it should resolve after one or two reboots.

• If it still won't boot go back to TWRP recovery and restore your backup. This will restore your Kindle OS which was saved during the backup. Then check Tekify for hints on how to proceed.

I did not have any issues with any of the steps and all worked after the process was finished. So, what were the results? So far, the Wi-Fi connectivity issue I was having has not surfaced again, being solid. Could have been caused by a system glitch in the Kindle OS or botched update from Amazon. I can now install applications that previously required the device to be rooted. My efforts will not be over written by any updates Amazon is pushing out as the Kindle is no longer a registered device. If I wish I can try other ROM updates by just loading them through TWRP.

Rooting a device and installing a custom ROM is not for everyone. If something goes wrong during the Root or ROM process you stand the chance of turning your device into a brick, though there are recovery step instructions out on the internet. Rooting will void your manufacturer's warranty. Installing a custom ROM is not so much a necessity these days as Launchers are available to replace the stock home page launcher that came with your device, often with advantages over the built-in launcher. However, a launcher is just an app that runs on the stock OS that came with your device with all of the lockdown the manufacturer put into the OS. if you are looking for an updated Android version or to completely unlock your device look into Rooting and installing a custom ROM.

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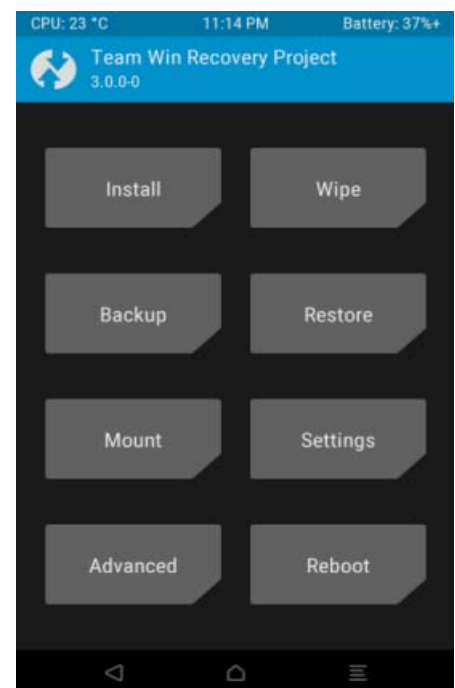
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Danbury Area Computer Society
65 Legion Rd
New Milford, CT 06776
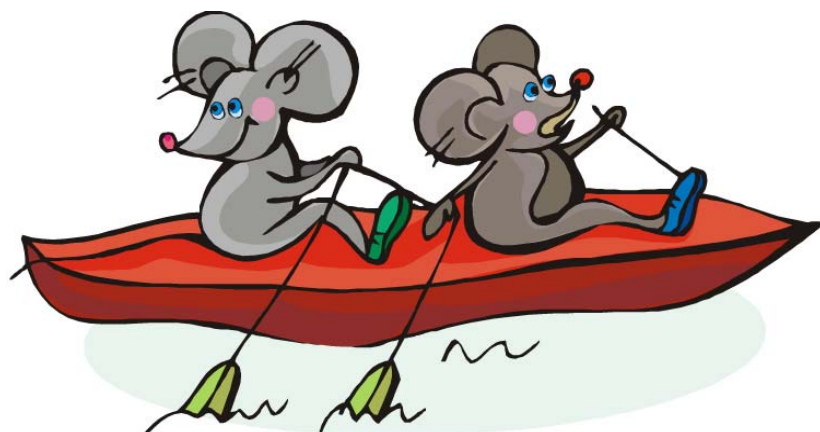
When you come to the next DACS meeting, why not bring a friend?

Future Events:

July 11
iPAD App for Dementia Ed Fitzgerald

August 1
Robert Hurlbut online privacy and virtual private networks

September 5
Shannon Calvert astrophotography

October 3
TBA