

# Bits of Bytes

Newsletter of the Pikes Peak Computer Application Society, Colorado Springs, CO

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## The Prez Sez

by Joe Nuvolini, President, P\*PCompAS

I had a pleasant surprise after the latest monthly Windows 10 updates on both my 32-bit and 64-bit computers. I received the following message: "Feature update to Windows 10, Version 1903. The next version of Windows is available with new features and security improvements. When you're ready for the update, select download and install."

Both went smoothly. That's the good news. On the other hand, I received a message recently on my trusted Windows 7 netbook that they will no longer be providing security updates in 2020. I found this online: "You can continue to use Windows 7, but once support ends, your PC will become more vulnerable to security risks. Windows will operate but you will stop receiving security and feature updates. ... Support for Internet Explorer on Windows 7 devices will be discontinued on January 14, 2020."

That doesn't seem so far away as it did when end of support was first announced. The program at the July meeting will be on changes in Windows 10 ver 1903. ☺

Watch a hacker hack the hackers. This video is called "Inside a scam call center" with the call center being located in India.  
[https://www.youtube.com/watch?v=xb\\_rgQ4IDS8](https://www.youtube.com/watch?v=xb_rgQ4IDS8)

## Next P\*PCompAS meeting: Saturday, 6 July 2019

The presentation will be about changes in Windows 10 version 1903.

## Meeting Minutes

by Cary Quinn, Secretary P\*PCompAS



President Joe Nuvolini called the 1 June 2019 Membership Meeting to order at approximately 9 am. Coffee is free for first-time guests and a dollar for members. The minutes from the previous month were approved.

## OFFICER REPORTS

VP Jeff Towne was unavailable due to family matter.

Secretary Cary Quinn was running late (nothing to report).

Treasurer Chuck Harris reported no changes to our accounts. We have \$187.33 in checking and \$3604.50 in savings

Membership Chair Ann Titus had nothing to report.

Editor Greg Lenihan said the next newsletter deadline is the 22nd of June.

Librarian Paul Godfrey was not present.

Hospitality Chair Ilene Steinkruger mentioned that those who were members of CoSNUG should be aware that Art Boedigheimer passed away.

BOD Chair Joe Nuvolini had nothing to report.

We are still looking for someone to take over the Nominations Committee.

OLD BUSINESS: None

NEW BUSINESS: None

## ANNOUNCEMENTS

The Social Breakfast is on June 15<sup>th</sup>.

Our next Membership Meeting is on July 6<sup>th</sup>. ☺

## PROGRAM



Cary Quinn showed several videos that discussed the characteristics of CPUs.



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## [Fifteen] Windows 10 Features You Didn't Know About

By Bob Rankin, <http://askbobrankin.com>, published through the APCUG

Windows 10 has been here since July 2015, and hundreds of millions are using it. Yet there are still many new and useful features in Windows 10 that most people don't know about. Here are some of the most useful, interesting, or at least amusing ones...

### Fifteen Lesser-Known Features of Windows 10

If you've moved on to Windows 10, you'll want to make the most of it. Check out these new features to improve your geek-cred and productivity. Some of them require that your computer is updated with the Fall 2018 or Spring 2019 Update. If any of the items below don't work, or don't work as described, use Windows Update to download and install the latest updates for your computer.

**(1) The Cloud Clipboard** lets you have multiple items in the clipboard buffer, finally! Press Windows+V to show the content previously copied (text and images). Items in the new clipboard can be shared with other devices that are signed into the same Microsoft account. You can also "pin" frequently used content to the clipboard, so they can be re-used over and over.

#### **(2) Improved Sticky**

**Notes:** Windows Sticky Notes is not new, but the latest update has some nice new features. Most importantly, it now keeps a list of your Sticky Notes. Previously, when you closed

one, it was gone forever. You can also sync sticky notes between computers.

**(3) Snipping and Clipping:** Most Windows users know that pressing the PrtSc (print screen) button will capture the entire screen, and place the image in the copy/paste buffer. You might not know that you can select an area for capture with Windows+Shift-S. Drag the mouse cursor around the rectangle you want to capture and release. After using either method, the image can then be pasted into a graphics program, photo editor, or directly into a document or email.

**4) The "Get Help" app** is new in Windows 10. You can open a text chat session with a Microsoft "Answer Tech" if you need help. There's also an option to supply your phone number and have a tech support person call you at a time you specify. To open the app, type **Support** in the search box and click on the result. (You must be signed in to a Microsoft account.)

**(5) Scrolling in inactive windows:** In past Windows versions, only the active (current) window could be scrolled using the mouse wheel. In Win 10, you can scroll in any open window. Just move the mouse cursor over the window, and you can scroll using the mouse wheel, without clicking inside the window first. On my Windows 7 system, scrolling

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## Google Drive and Photos Are Splitting: What You Need to Know

By Chris Hoffman, reprinted with permission from [HowToGeek.com](https://www.howtogeek.com)

Original article at: <https://www.howtogeek.com/425020/google-drive-and-photos-are-splitting-what-you-need-to-know/>

Google has [announced](#) that Google Drive and Google Photos will be separating in July. Google says, “the connection between these services is confusing,” so it’s making some changes to “simplify the experience.” Here’s what that means for you.

### How Were Google Drive and Photos Connected?

Currently, Google Drive and Google Photos are linked together. From within Google Drive, you can select a “Google Photos” folder to browse all your photos and videos. The Google Backup and Sync tool for Windows and Mac can sync these photos to your computer, just as it can sync your other Google Drive files.

And, from within Google Photos, you’ll also see photos you store in other folders in Google Drive.

These interfaces are linked together. If you delete a photo from within Google Drive, it also vanishes from Google Photos. If you delete a photo from within Google Photos, it will also be

removed from your Google Drive.

Google says it’s heard feedback that this connection is confusing, so it’s making some changes.

### What’s Changing?

Starting sometime in July 2019, this connection is being removed. New photos (and videos) added to Google Photos will not appear in the Google Photos folder in Google Drive. According to Google’s announcement, any existing photos and videos you have in your Google Photos folder will continue to remain there in Google Drive—but no new ones will be automatically added.

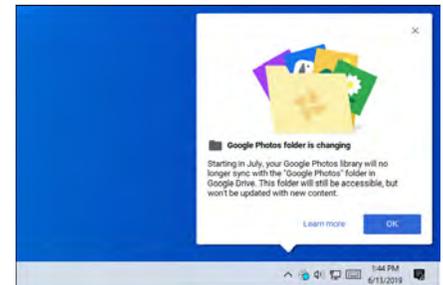
New photos and videos stored in Google Drive won’t automatically be shown in Google Photos, either.

If you delete photos or videos from Google Drive or Google Photos, they won’t be automatically removed from the other service. Google says, “this change is designed to help prevent accidental deletion of items across products.”

In other words, the automatic link between the two services is being removed. Photos and videos

will exist only in one place. Google is already showing a notification saying your “Google Photos folder is changing.”

### What Happens to My Photos and Videos?



Nothing’s changing for existing photos and videos. If you currently have photos on Google Drive, those photos will still be shown in Google Photos in the future. If you currently have photos in Google Photos, they’ll still be shown in the Google Drive folder in the future.

However, any new photos uploaded to Google Photos won’t appear in Google Drive, and any new photos uploaded to Google Drive won’t appear in Google Photos.

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The digerati got an early jump on the day, especially because the summer solstice and extra sunlight were at hand. It seemed to add to their appetites and enjoyment of talking about geeky things and relevant issues.



*Win 10 Features (Cont. from page 2)*

in inactive windows does work. Perhaps that is because I have a Logitech M510 mouse with that functionality built into the driver software. Or maybe I'm just special. But in Windows 10, all mice are equal, at least when it comes to scrolling. If you don't have Windows 10, and you can't scroll inactive windows, you can use [WizMouse](#) to get the same effect.

**(6) File Explorer now opens with a "Quick access" view**, showing a list of commonly-used and frequently-visited folders, and a list of recently opened files. You can also navigate to a folder, then select the Home tab and click "Pin to Quick access" to make that folder appear in the Quick access list.

**(7) Print to PDF:** a native printer driver that converts documents to PDF files has been added to Windows 10. When printing from any Windows app, select "Microsoft Print to PDF" as the printer name. Instead of committing your masterpiece to paper, it will be saved as a PDF file.

**(8) The Command Prompt has been upgraded with new features in Win 10.** The window can be dynamically resized, and copying and pasting to or from a Command Prompt is now much easier; the standard key combinations Ctrl-C and Ctrl-V actually work! Also, text can be made to wrap when a Command Prompt window is resized, instead of vanishing under an edge of the window. Many other Command Prompt enhancements are detailed in this Microsoft [blog post](#).

### Control and Customization

**(9) Windows Update runs on auto-pilot** in Windows 10, but you do have some new controls. The Professional, Enterprise, and

Education editions of Windows 10 have an option called "Defer upgrades." When you defer upgrades, new Windows features won't be downloaded or installed for several months. Security updates will still be applied. From the Start button, type "windows update settings" and press Enter. Then click the "Advanced options" link to see the Windows Update settings. (This feature is not available in the Windows 10 Home Edition.) You can also schedule a required restart for a time that's convenient for you.

**(10) "Sideload" apps:** in Windows 8, Microsoft allowed only apps from its Windows Store to be installed. This move mimicked Apple, which allows only Apple Store apps on its devices. Security is the reason for this restriction, but the general population of Windows users doesn't want to be deprived of all the good, perfectly safe apps written by third-parties. So in Win 10, you can "sideload" apps - that is, load them from a source other than the Windows Store. But you have to enable this feature. Go to Settings > Update & security > For developers. Then click the button next to "sideload apps." A warning about dangers of sideloading will appear and you'll be asked to confirm that you wish to enable sideloading; answer "yes" and it's done. My advice is to turn this feature off again, after loading the desired app.

**(11) Stylish Desktops:** You can now customize the look of your desktop better than ever. Go to Start > Settings > Personalization > Colors. Choose "Show color on taskbar and Start Menu." You can pick the color from a palette, or let Windows choose a color from your background photo to display under icons of open apps. You can also remove the translucent property of the Start Menu.

**(12) Monitor Apps' Disk Space Usage:** Windows 10 will now tell and show you what apps are using the most disk space, a boon if you are short of free bytes and want to manage space carefully. Go to Settings > System > Storage. A list of drives connected to your computer will appear. Click on one of them to see how much space each app and its data are consuming on that drive. Note that you can also change the folders in which files of different kinds are saved.

### Contacts, Security and Emojis

**(13) My People:** My People is a new feature in the Windows 10 Fall Creators Update that started rolling out on October 17, 2017. It lets you pin up to three contacts to the task bar at the bottom of your screen. Click one of those icons, and a Skype messaging window will open. (You can use Mail, or a different messaging app from the Windows Store if you prefer.) You can also drag and drop pictures onto a contact to quickly share them.

**(14) Ransomware Protection:** Another piece of the Windows 10 Fall Creators Update is Controlled Folder Access, which prevents ransomware from accessing your important files. This works by locking certain folders so that only authorized apps can access them. By default, Controlled Folder Access protects your Documents, Pictures, Music, Videos, Favorites and Desktop folders. You can add additional folders to protect, and specify your own trusted apps. Access the Windows Defender Security Center to tweak those settings.

**(15) Emoji!** We've gotten used to having those little icons when texting on our mobile devices, but

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*Google Drive/Photos (Cont. from page 3)*

### How Can I Move Photos From Drive to Photos?

Google is adding an “Upload from Drive” feature to Google Photos. When you head to the Google Photos website, you can select “Upload from Drive” to upload photos and videos from your Google Ddrive account to Google Photos.

After they’re uploaded, these photos and videos won’t be linked—in other words, if you upload a photo from Drive to Photos and then delete it on one service, it won’t be removed on the other.

This also means that, if you upload a 50 MB video from Drive to Photos and leave it in both locations, it will take 100 MB of your Google account’s storage quota.

### Can I Still Sync Google Photos to My PC or Mac?

Currently, this integration means you can automatically download (sync) any photos and videos added to Google Photos to your PC or Mac. It all happens via the normal [Google Backup and Sync application](#) that syncs Google Drive files—just select the Google Photos and everything syncs.

Is this feature going away? It looks like it might. Google’s statement says that “You’ll still be able to use [Backup and Sync](#) on Windows or macOS to upload to both services in High Quality or Original Quality.”

In other words, Google says you’ll still be able to upload photos and videos from your PC automatically—but doesn’t mention downloading

photos and videos to your PC. We’ll have to see exactly what Google does in July, but it looks like this feature is going away.

If you need to sync photos to your PC, you might be better off switching to [Dropbox](#) or [OneDrive](#) on your phone. Those services can automatically upload photos you take, and then you can sync them to your PC like any other folder.

### Can I Automatically Upload Photos to Google Drive?

The Google Photos application for Android and iPhone will still automatically upload photos, if you like—but only to Google Photos. You can no longer automatically upload them and have them placed in Google Drive—at least with Google’s own applications.

As [Android Police](#) notes, the Android app [Autosync for Google Drive](#) could help fill the hole. It will let you automatically synchronize files and folders (including photos) with your Google Drive folder. They’ll then sync to your PC. It’s two-way sync, too, if you like—you can delete photos or other files in the synced Google Drive folder, and Autosync will delete them in their original location on your Android phone. ☺

*Win 10 Features (Cont. from page 4)*

now there’s a handy emoji keyboard built into Windows 10. When your cursor is in a text field, press WIN+. (the Windows key and the period key) to pop up a selection of smiley-faces, hearts, food, and other icons that you can paste into your messages. You’ll need the Fall Creators Update to get your emoji on.

### One-Stop Shopping For Windows 10 Tweaks

**(BONUS) GodMode is not an official feature**, and it doesn’t

actually give you super powers. But it is a useful hack put together by an overworked and underappreciated system administrator long, long ago. Yes, GodMode has been available in earlier versions of Windows, and its fans are delighted to see it still works in Windows 10. GodMode provides a unified, categorized view of all of Windows’ farflung features, commands, settings, and functions, all in one place that you can open with a single click.

Think of it as Control Panel, Unlimited. To activate GodMode, right-click on your desktop, select New > Folder to create a new

empty folder on your desktop. Then copy this string of characters below to your clipboard: **GodMode.{ED7BA470-8E54-465E-825C-99712043E01C}** Right-click on the new folder and select “Rename.” Paste the string into the space for the folder’s name and press Enter. Now, whenever you open that folder, up will pop the monster menu of options that is GodMode. You can change “GodMode” to whatever you like; one person I know uses “BobMode.” Just don’t lose that period that follows the name and precedes the cryptic string of characters! ☺

## Google Makes Remote Access of a Computer Even Easier

by Perry Cohen at Komando.com (tip from 6/10/19)

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If you're a computer whiz, you understand the difficulties of trying to explain simple computer solutions to a friend that is not as in the loop with technology. You could take the time to visit your friend but if they live a far distance away, that isn't much of an option.

Luckily, Google Chrome has a simple solution for you to help solve your friends' problems, or for them to solve yours. Google has made Remote Desktop access much easier without having to replace your existing Chrome application.

Of course, this can be used for more than just helping a friend fix a computer problem. You can also use it to access your home or work computer to get important files when you're not sitting in front of it.

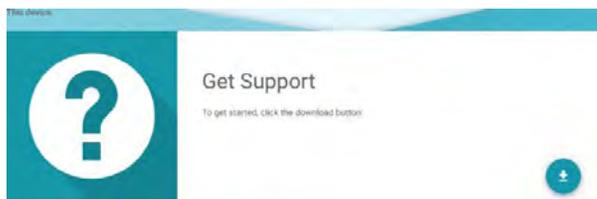
### How Google's Remote Desktop works

Google has made the application accessible on both Mac and PC computers. Both are installed and operated the same way on both systems.

If you share access to your screen with someone else, you are giving them 100 percent access to everything on your computer. This includes apps, emails, documents, pages open on the Internet and your files. Start-to-finish the process of sharing and ending the share can be completed in eight steps.

First, you need to open Chrome. If you don't have Chrome, download it.

Once Chrome is open, type [remotedesktop.google.com/support](https://remotedesktop.google.com/support). When the page pulls-up, press the download button under 'get support'. This step is different if someone is granting you access. If you are giving support, enter the access code that will be provided by the person on the other end.

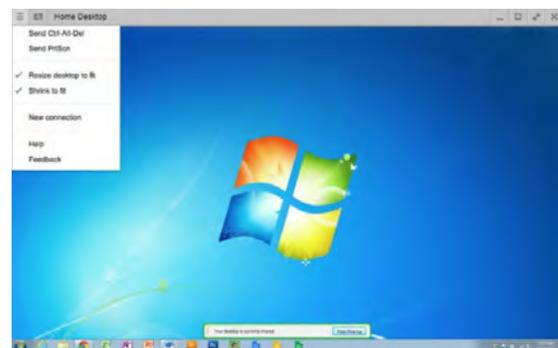


After the get support tool is downloaded, a list of directions will appear on your screen detailing how to download and install the Remote Desktop feature. If you followed the directions properly, you'll be provided the option to generate a code. This code must be copied and sent to the person you are screen sharing with.



Now you need to wait.

The person receiving the code has to input the code on the website. By doing so, a dialogue with their email address will appear on your screen. At this point, select share to allow them full access to your computer. When you've decided to end the sharing, click stop sharing.



If the desktop sharing feature is already downloaded on your Mac or PC, the process of screen sharing becomes much simpler. All you need to do is select the Chrome Remote Desktop icon and then press 'get started.' To create the access code, select 'share' and send the code to the other user.

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## ***What is Browser Cache? How Do I Clear It? Why Would I Want To?***

By Leo Notenboom, <https://newsletter.askleo.com>; published under the Creative Commons License

*“Clear your browser cache” is the first response tech people give when you encounter webpage problems. We’ll look at why that is and how to clear the cache.*

The browser cache appears in more answers than questions, but often causes even more questions.

Even while following instructions to empty the cache, many people aren’t clear on what this piece of magic really is, or why clearing the cache does anything at all.

Let’s review what the browser cache is and why it exists. I’ll also point you to steps to clear it in Edge, Internet Explorer, Firefox, and Chrome, and try to dream up some reasons why that sometimes

helps.

### **The browser cache**

The cache exists because of a basic assumption made by browser designers: the Internet is slow.

More accurately, your Internet connection is slower than your computer.

It’s faster to get something from your [hard disk](#) than it is to get it from the Internet. Even with today’s Internet speeds, that still holds true.

Browser designers noticed that most websites have many of the same elements on multiple pages. For example, if you look at this page, you’ll see the [Ask Leo!](#) logo at the top. It’s actually at the top of every page on this site. So the thinking was, why download the

same logo over and over for every page? Why not just download it once and then keep a copy so we can display it again without downloading it every time?

That’s the browser cache. It’s nothing more than a place on your hard disk where the browser keeps things it downloaded once in case they’re needed again.

The very first time you visit any page on this site, the browser downloads the logo, and several other items, into the cache, and then displays it as part of the page you’re viewing. For each additional page you visit, as long as the same logo is displayed, it doesn’t need to be downloaded again — it’s already

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### *Google Remote Access (Continued from page 6)*



Once they receive the code, the steps are the same.

### **Dangers of desktop sharing**

This feature provided by Google can be a great deal of help when trying to explain something on the computer step-by-step. You can show anyone the process rather than attempting to tell them how to do something.

However, desktop sharing could be risky business especially if you aren’t used to working with it. Using sharing requires a great deal of trust for both the person providing the code and the person receiving it.

If you give someone a code to access your computer, they have full, unrestricted access to anything on your hard drives. Although they have permission to view your computer, you don’t have any permission to view theirs.

[One safety precaution](#) that Google has taken is 30-minute reminders to share users. If you’ve been sharing for an extended amount of time, Google will ask you to confirm your knowledge that sharing is still being used.

### **Other uses for Remote Desktop**

There are a number of other things desktop sharing can be used for. While it is great to help with computer problems, it could also be used for other purposes like work presentations or remote tutoring.

Google Chrome desktop sharing is an excellent tool for many reasons. Follow the steps and find out how it can help you.

You can [access the site here](#). You can also download an app for both iOS and Android that lets you use Remote Desktop on your mobile device. [Tap or click here to download the app for iOS.](#) [Tap or click here to download the app for Android.](#) ☺

## ***Consider the Risks of Helping Friends with PC Problems***

*By Dick Maybach, Brookdale Computer Users Group, NJ, [www.bcug.com](http://www.bcug.com), n2nd (at) att.net*

If you are known as a computer enthusiast, your less-experienced friends probably come to you for help when they run into problems. However, you should consider the risks before you agree. While you have a lot of computer experience, most of it is probably limited to your own system, which you are careful to maintain and back up regularly. You also are aware of the risks and avoid suspicious Internet sites, are alert to e-mail scams, and have installed protection against malware. This may not be true of the owner of a PC you are asked to repair.

I once agreed to help a friend who was complaining about his laptop being slow. My first clue that I was in over my head was when I saw the missing keys on the keyboard, but by then I was already committed. I did what I could to clean things up, but the slow processor, full disk, and inadequate RAM remained, and my several hours of work produced little improvement. Another experience was more successful. A PC was thoroughly infected with malware when a teen-age son downloaded pirate music. I cloned the disk, mounted it on another PC, and deleted the problem files. The owner used the

restoration partition to put the disk back to its condition when the PC was purchased, after which I loaded their files from the sanitized clone disk. This too took several hours.

Your friends may have unrealistic expectations. If the problem appears to be a full disk or inadequate RAM, the money spent on the parts may not result in a dramatic performance improvement. If you suspect malware and recommend they purchase anti-virus software, it may not fix the problem, and may even slow their PC. You've cost them money without fixing the computer to the degree they expected. And once you've mucked about with their PC, they may suspect that any subsequent troubles are your fault.

Finally, because you are working in an unfamiliar environment, you will probably be spending many hours, even if you aren't successful. Repairing someone else's PC is usually a lose-lose situation. If you fail, you lose a friend, and if you succeed you'll most likely be asked to do it again. The bad habits and poor maintenance that led the initial

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### ***Browser Cache (Continued from page 7)***

on your hard disk.

The cache has a size limit, which you can usually configure. When the cache gets full, the items in it that haven't been used in a while are discarded to make space for items you're using now.

Naturally, there's more to it than that. For example, there are ways for me to update the logo on my site and have that override whatever is in your cache, so what you see is always up-to-date. But by and large, that's all it is: a place to keep things locally so you don't have to download the same things over and over again.

And it's all transparent to you. Until something breaks.

### **Clearing the cache**

Clearing the cache just means emptying it, so the next time you display a webpage, everything must be downloaded anew.

For reasons I can't explain — other than by saying "stuff happens" — the cache sometimes get confused. This seems to happen to all browsers and at random times. You'll see partially loaded or badly formatted webpages, pages that should update but don't, incomplete pictures, or, in some cases, the wrong picture in the wrong place.

It's not always a caching problem, but because it happens often enough, "clear your browser cache" is one of the first diagnostic steps you'll hear from people like me.

I've put together instructions for the four most popular browsers.

- [How Do I Clear The Browser Cache in Microsoft Internet Explorer \(IE\)?](#)
- [How Do I Clear The Browser Cache in Mozilla Firefox?](#)
- [How Do I Clear The Browser Cache in Google Chrome?](#)
- [How Do I Clear The Browser Cache in Microsoft Edge?](#)

### **An empty browser cache**

Your browser cache is empty — so what?

An empty cache means there's no confusion. As you visit webpages hereafter, the browser will download fresh copies of everything you see on each page. You've simply forced your browser to rebuild its cache from scratch as it loads or re-loads pages. Any cache-related issues should be cleared up.

Until the next time. ☺

*Risk of Helping Friends (Continued from page 8)*

problem are still present.

If you decide to help, what are some reasonable actions? Your first concern, of course, is to safeguard the owner's information, which means cloning the entire disk (or disks) to an external drive, which can take several hours. Note that this means you copy every byte, not just the complete files. By doing so you may be able to recover deleted and damaged files, directories, and partitions, should that be necessary. If the problem PC is dead, you will of course have to remove its hard disk and install it in a good computer to clone it.

Before you try to diagnose the problem, recognize that you may not be able to trust either the hardware or software in the problem PC. My preference is to use a USB memory stick with a bootable diagnostic operating system, such as PartedMagic, which has tools to check hardware, recover files, and test for malware. (See my articles in June, July, and August, 2012 on file recovery, in April 2012 and February 2017 on PartedMagic, in May 2015 on the Trinity Rescue Kit, and in June 2015 on the SystemRescueCD, all available at [www.bcug.com](http://www.bcug.com).) Whichever diagnostic tool you use, become familiar with it on your own PC before trying it on one with which you aren't familiar.

If you save the user's files you should check them for malware before reinstalling them on a repaired or new PC. Take the clone disk home and run a thorough malware check. (Parted Magic, in particular, has the relatively weak ClamAV, which checks only and doesn't repair. If you use Windows, you most likely have far better software on your machine.) Once you have cloned a disk, you can use PartedMagic's tools, or those of a similar system, to recover damaged files. If, as is likely, the problem PC runs Windows, some

user data (for example, Internet favorites and e-mail) may be stored in the system area. The locations vary with the version and restoring them in a new system may be difficult. Before spending a lot of time, ask the owner if they really need to recover these.

Although it can be very time-consuming, you can attempt to clean up the file system. This means removing malware, pop-ups, spurious menu bars, and the like. It may also require disabling programs that launch at boot time, and perhaps editing the registry. This is likely to be frustrating as the owner still has the bad habits that caused these problems, meaning they will most likely recur.

Before you agree to anything, try to find out how the problem began. Did they install hardware or software? Did they see a pop-up or get a phone call or message advising them of a problem? Did they visit a new website? Did they delete files or directories by mistake? Did the symptoms appear suddenly or build over time? You are trying to discover whether the problem resulted from hardware failure, software failure, malware, or operator error.

If you have decided to help, this is what I recommend. (Most likely you'll modify these steps to fit your own experience and tools.) Before you begin, be sure the user understands that you are an amateur, and that you can't guarantee success.

- For a casual friend, find out what you can over the phone and recommend a shop.
- If you decide to get more involved, go to the house with a diagnostic USB memory stick and check the hardware and file system. Write down what you find and recommend a shop.
- If this is a very good friend or a close relative, tell them not to use the PC until you can

image their PC's disk. (If you don't have a spare USB hard disk they will have to purchase one for the purpose.) Then use your diagnostic memory stick to create an image of the system disk on the external one.

- If the hardware is good, use the restoration partition to return the PC file system to its state at purchase time. (In the unlikely case that the owner has a valid Windows installation disk, you don't need a restoration partition.)
- If the hardware has failed, the owner can decide whether to have the PC repaired or replace it. After this, do what you can to restore the data you have saved, but make it clear that some may be lost.
- Be sure the owner understands that a new PC or a clean install of the operating system means any applications installed after purchase will be lost unless he or she has their original installation disks.
- The last option is to attempt a repair. However, before you jump into this tar pit, be sure the owner understands and accepts the risks. He or she should purchase the parts, with your advice of course. Be sure to make clear that you are amateur in unfamiliar territory and that success is not assured. For example, if the disk has failed because of a faulty power supply, its replacement may be damaged immediately. Who pays?

This is not to say you shouldn't try to help, but it would be prudent to think about your possible approaches as well as the risks before you get the phone call. You don't want to disappoint a friend or cause them to lose money. ☺

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**Coming Events:**

**Next Membership Meeting: 6 July beginning at 9 am (see directions below)**

**Next Breakfast Meeting: 20 July @ 8 am, Golden Corral, 1970 Waynoka Rd.**

**Newsletter Deadline: 20 July**

**Check out our Web page at: <http://ppcompas.apcug.org>**

