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BITS AND BYTES

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GENERAL CLUB MEETING VIA ZOOM

**Wednesday, May 26, 2021
6:00 P.M.**

Keep up with your iPhone / iPad apps

By Jim Cerny, Director, Sarasota Technology Users Group
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Technology “apps” (short for “applications” or “software”) are doing so much to help us in many ways. You probably have noticed that your apps need updating and if you do not have “auto-update” turned on in your settings, then you should be updating your apps whenever there is an update available. Updates improve the app, hopefully, resolve problems, and add new features too. You may have noticed that your favorite apps DO change – different colors, menu choices, options, and images. Are you aware of the latest changes to the apps you love and use most?

It's hardly any trouble to update an app but rarely do people take the time to find out what is actually in the update. There could be some hidden treasures there waiting for you! The iPhone, for example, has some big updates (almost annually) which can make the “look and feel” of your iPhone (or iPad) quite a bit different. But many updates to most apps do not make big changes to what you see on your screen, but change some things “behind the curtain”.

Are the apps on your iPhone or iPad being updated automatically? To find out, touch “Settings” on your iPhone (the logo looks like a gear wheel), and then scroll down a bit to touch “iTunes and App Store”. Here you will see a list of several options – look under “Automatic Downloads” for “App Updates” – the sliding button to the right will be GREEN if it is ON and gray if it is not. I would recommend that you turn this ON. Note that even if this is turned “on”, the latest updates may not be installed immediately, it may take some days.

Why not make a shortlist of those apps you use most often? On my list, for example, would be my weather (WeatherBug), calendar, photos, messages, and Google maps to name a few. To find out the updates that have been “released” or made available for any app -- on your device start by touching the “App Store” icon and then, in the search bar, enter the name of your app (such as “WeatherBug”). You will see an oval box that will say “open” or “update” if that app needs updating. Now touch that app and it will open the App Store description about that app. Touch on the text “Version History” to see a list of the latest updates AND what each update did.

Many updates just fix internal bugs or problems and do not change anything you see on your screen. But it is always wise to take a few minutes and ask Google “What new features are on the ‘WeatherBug’ app?” and you will be given a list of articles that describe the new or latest included features. Scan over this list to see which of these changes affect you and how you use that app. (I am just using “WeatherBug” as an example). Some of the things I learned was that I could customize my starting screen that appears when I open this app, I can put what most interests me first on the screen. I also learned how to add and delete any city's weather on my list so I can easily see the weather in other places on earth. Then I noticed many options I had no idea were included in that app! To be honest, most of them did not interest me, but several did. This is true of ANY app. Many of us (myself included) go along and keep using our favorite apps and never become aware of the new options included in recent updates. So why not “take an app a day” and ask Google about it? – You are certain to learn some new things that will make you even better at using and enjoying the apps you love.

Safe Experimenting

By Dick Maybach, Brookdale Computer User Group — www.bcug.com — n2nd (at) att.net

At the dawn of the personal computer age, life was simpler and more fun. Malware didn't exist, nor did the Internet, and the most valuable thing on our PC was the BASIC program Hunt the Wumpus. We continually tried new software (usually discarding it immediately). Now our PCs contain vital data, such as family photos, financial records, tax returns, and email history, which makes many reluctant to experiment. While the Internet is full of free and cheap software, much of it is tainted, and we are hesitant to take a chance with anything. Moreover, modern operating systems are complex, making tinkering with their

organizations hazardous. As a result, we are sitting in a huge virtual library, but afraid to take a book off the shelf.

You can restore the adventure to PCs by setting up an environment, separate from the one presently on your machine, where you can experiment safely. However, remember that an effective backup discipline is always your last and best defense. Let's examine three such environments, virtual machines (VMs), dual-booting, and separate hardware.

No matter which environment you choose, you will need an operating system for it. If you use Windows, you have to purchase a separate copy, as the Microsoft license allows Windows to be installed in only one environment. Windows 10 is available (from Amazon) for as little as \$50, which lets you achieve greatly increased security and yet stay in familiar surroundings. You also could use Linux, which opens up a whole new world of open-source software and which is generally malware-free, but the environment change may be traumatic.

The easiest separate environment to set up is a virtual machine, such as Oracle's VirtualBox, but it requires competent hardware, at least eight Gbytes of RAM (16 is better), and 30 to 50 Gbytes of available disk space. When the VM is running, your hardware is supporting two environments, the one on your PC (called the host) and the one on the VM (called the guest). As a result, the guest environment may be noticeably slow, but less so if your hardware supports virtual environments. The key features on the CPU are VT-x on Intel and AMD-V on AMD processors, and these are now common, even on laptops. Be sure to check your VM documentation, as these features may be disabled in your BIOS.

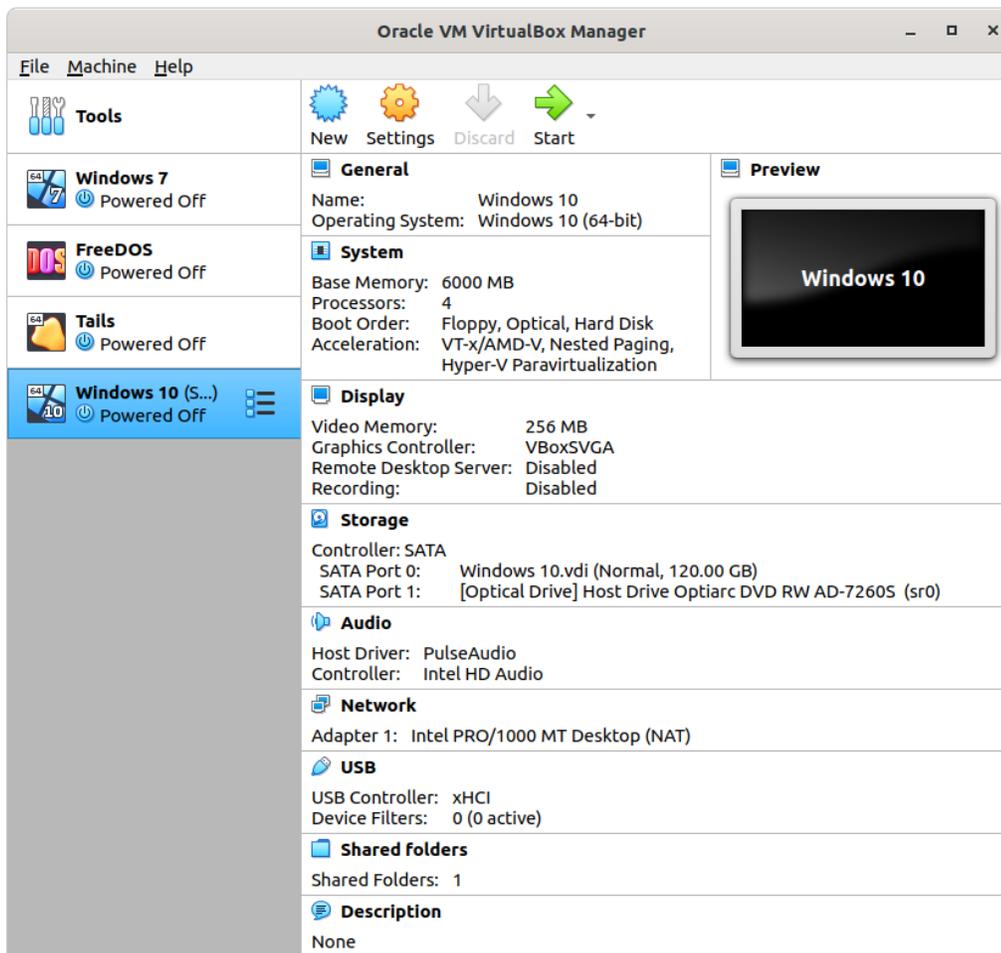


Figure 1. VirtualBox Manager.

In operation, a VM looks like an application to the host; see Figure 1, which shows the VirtualBox manager. You use a virtual manager to add, delete, and configure VMs, and this PC has four, Windows 7, FreeDOS, Tails, and Windows 10. The figure also shows a summary of the VM running Windows 10.

The VM snapshot feature is useful for experimenters. Making a snapshot is equivalent to cloning the environment, and if the current experiment isn't successful, you can restore things with a click or two. Also, since VMs are just files on the host when you back up the host, you also back up the VMs.

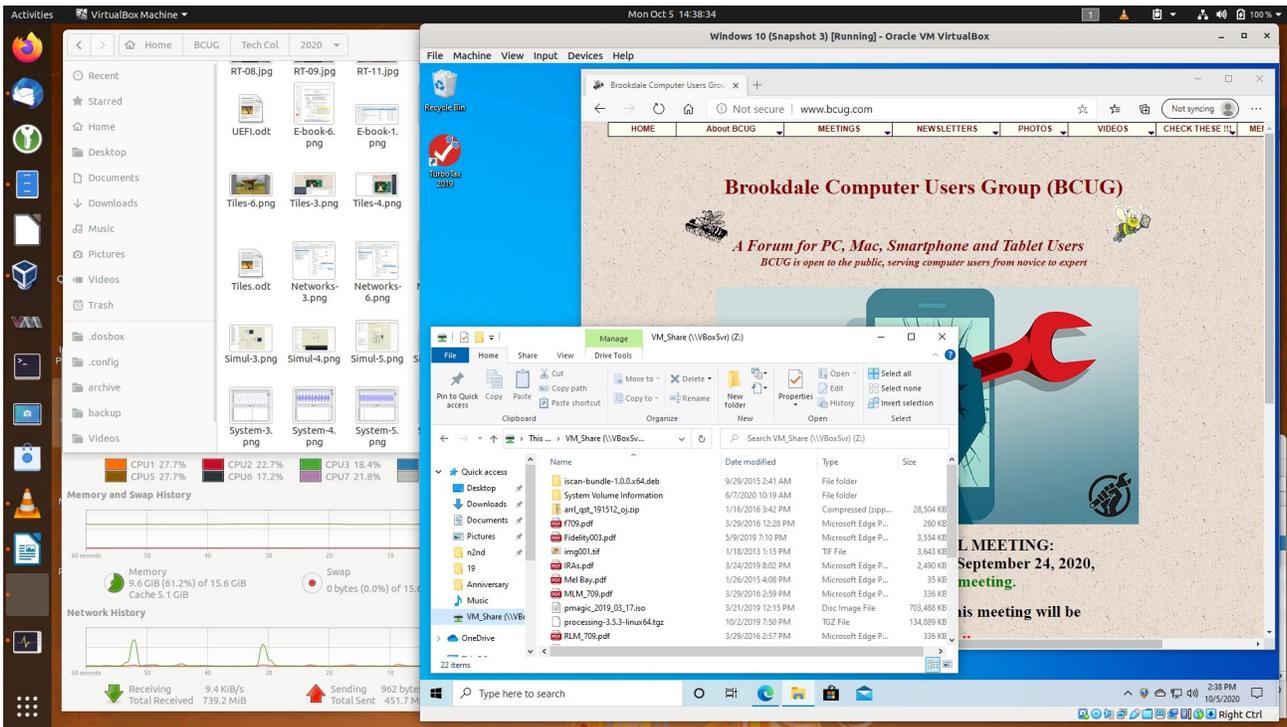


Figure 2. Host Desktop with a VM Running.

Figure 2 shows Windows 10 running in a VM on a Linux host. As you can see Windows has access to the Internet. Note also the file-manager window, which is looking at a directory on the host. Both Linux and Windows can access files in this directory, making it easy for the two to exchange information. You can also copy and paste between the two. However, these features require that you install the Guest Extensions to VirtualBox (see its documentation).

Before VMs became available, I used dual-booting for experimenting. This has the advantage of making all the resources of the host machine available to both environments; using VMs of course means that resources are shared between the host and the guest. The drawback is that setting up dual-booting requires some expertise and adds some risk. Here are the steps.

- Back up the system.
- Defrag the operating system to ensure that nothing is stored at the high addresses.
- Shrink the partition to make space for a second one above it. The second partition should contain at least 100 Gbytes. If you are short of space on your disk, you'll have to install a second one.
- Install the second OS in the second partition.

This involves more risk than installing an application, so do your homework before attempting it. You also must be careful to back up the second environment separately.

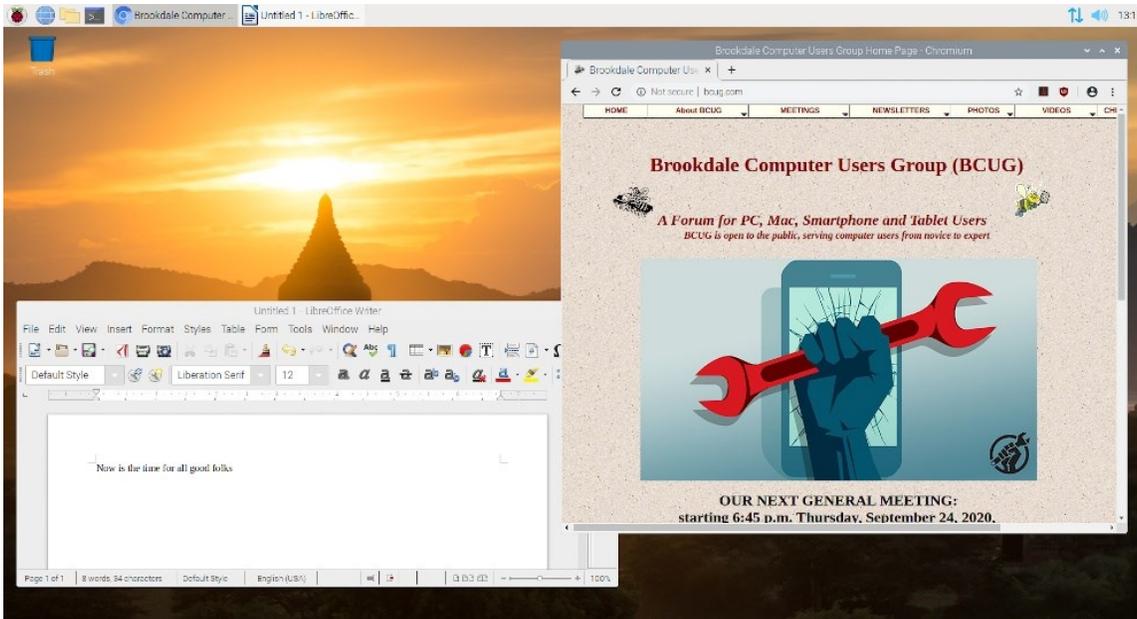


Figure 3. Raspberry Pi Desktop.

The last and safest method of obtaining a test environment is to use a separate PC. Many of us have old, unused machines, making this approach very cheap indeed. Its main disadvantage is the space occupied. If you don't have an unused PC or are short on space, consider a Raspberry Pi; it is model 4 that has as much power as a PC of not that many years ago; see Figure 3. If you share your PC display, keyboard, and mouse with the Raspberry, it uses almost no space. A KVM (Keyboard Video, Mouse) switch will allow you to do the sharing conveniently. Alternatively, you can set up a remote desktop to access the Pi from your PC, making the former appear as an application on the latter. It doesn't even have to be in the same room; all both need is a connection to your home network. If you haven't used a Raspberry Pi, you should first read the introductory material on its website, <https://www.raspberrypi.org/>. Setting one up is quite different than getting started with a new PC. Instead of a hard disk, it uses a microSD card, which you'll buy separately and on which you must install the operating system that you'll download from the Raspberry Pi website. The OS is a Linux variant, which probably involves yet more study, but the whole idea of experimenting is to learn.

Once you have hardware for your test environment, you'll need an operating system. A VM and dual-booting give you the most flexibility, as you can use anything your host PC supports. With a Raspberry Pi, you'll be running Linux. Your options on a second PC depend on its age; older units may not support Windows 10 for example. You might also consider switching to Linux, as many distributions support older hardware. It also has thousands of free applications available.

Regardless of how you choose to do your experimenting, continue to exercise care if you transfer files to your home PC, as they can carry malware. Also, when you use virtual machines and dual-booting, you are not completely isolated from your home environment. Cross-contamination, while unlikely, is not impossible.

President's Corner—Smart Home, Smarter Home

by Greg Skalka, President, Under the Computer Hood User Group
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Everyone wants some control in their lives. Having the ability to control things in our homes can provide added safety, security, and convenience. Technology to enable consumer home automation and control has been around for decades and is constantly improving. It can provide useful assistance to those with disabilities involving hearing or sight loss, or those with reduced mobility. Home automation and smart home technologies can provide benefits as we get older, allowing us to stay in our homes longer. As we spend more of our time at home due to the coronavirus, a smart home can be brilliant.

The desire for home control has been around for a long time. Ever since the early days of TV, when viewers wished they did not have to get up out of their La-Z-Boy recliners to turn the knob on the set to change to the other channel (I was once told by someone that was what children were for), there has been a market for remote control. Remote controls became popular for televisions, entertainment systems, and garage door openers. What many longed for was a remote control for our houses.

One of the first and most popular home automation systems was the X10 line of devices, which was introduced in the late 1970s. They were sold under many names over the years, including X10, Radio Shack, Leviton, Sears, Stanley, Black & Decker, IBM, RCA, GE Homeminder, and Smarhome, and the company passed through many owners. X10 products and systems are still available, mainly through the x10.com website. For more information, look up X10 on Wikipedia.

I was interested in home control and so became an early adopter in the early 1980s. The devices were relatively inexpensive and systems could be pieced together, making it easy to get started in this addicting hobby. I bought many devices and controllers over the years, including alarm systems and computer interfaces, many of which I still have.

X10 is a fairly simple system that works reasonably well. Like the Smart Home Wi-Fi devices popular today, X10 has control devices that range from plug-in modules that items to be controlled plug into wired-in house switch replacements. There are many types of controllers, from plug-in boxes and timers to computer interfaces and alarm consoles. Almost everything was compatible with everything else; you could have as many controllers as you wanted and could control up to 256 devices in a house.

X10 was easy to use but did have some significant limitations. The control signals were transmitted by modulating digital data onto the house power wiring, so system setup was as easy as plugging things in. The data rates it used were low (20 bits/second), so control messages were very simple (the device address and basic commands like on and off). It did have problems getting messages through reliably, as the 120 kHz carrier frequency it used often received interference from household devices like televisions and computers. It also didn't handle passing signals between the two 120-volt legs in typical home wiring very well. They sell devices to bridge between the two-house circuits, but even then I often had problems transmitting between certain locations in my house.

At my X10 peak, I had about 16 controlled devices, with ten of them wired-in switch modules. Since X10 was constrained to your house wiring, control was limited to immediate control while in your home, or timers. There were wireless remote controls, but these transmitted a short-range RF signal to a plugged-in receiver module, which then transmitted control signals over the house wiring. I did have a phone controller, which consisted of a base module connected to my phone line and a battery-powered transmitter (about the size of a flip phone). I remember using it in the late 1980s to turn on the power to my garage door opener from my work (I had plugged my opener into an X10 module). I had a timer controller shut off my opener power after I left for work, but because the time I returned home was often variable, I used this phone device to turn the opener back on. At the end of my workday, I could call my home phone from work, and then once my answering machine picked up, use this hand-held transmitter to send audio signals over the phone to the module in my home. It decoded the sounds and sent signals over the power lines to turn on the opener. It may seem crude by today's standards, but it was pretty impressive to be able to do that at the time.

Today, of course, all smart home devices can be controlled from almost anywhere in the world through apps on your smartphone. Most smart home components communicate through Wi-Fi so are not tied to house wiring and have more reliable and sophisticated control (a few devices use Bluetooth or Zigbee and need a hub to connect to Wi-Fi). In addition to your phone, smart speakers like Amazon's Echo (Alexa) or Google's Home Assistant can be used to control your home.

I started buying Wi-Fi smart home devices soon after getting a smartphone. Once again, I was able to buy gradually, building up my new smart home over time. My first device was a Belkin WeMo smart plug; a plug-in module I use to control a table lamp. I now have seven devices installed to control lights; these include smart plugs, smart bulbs, and most recently a smart switch. I retired my X10 plugs some time ago; I'm now starting to replace the wired-in switch modules. Even though the X10 stuff still works, the allure of more sophisticated control through Wi-Fi and Alexa will I'm sure have me replace it all eventually.

That's not to say that there no downsides to the new Wi-Fi smart home devices. With X10, almost everything worked with everything else. Different parts from different vendors all played together nicely. With Wi-Fi smart home devices, this is only partially true. My seven smart home devices come from three different vendors (Belkin WeMo plugs, TP-Link smart bulbs, and Feit smart bulbs and plugs). Each vendor requires its own app for control on my phone. Each app is different and some are better than others. The one unifying factor is Alexa; almost all devices are compatible with the three voice-operated assistants (Amazon Alexa, Google, and Apple). This app-happy situation also applies to my smart cameras and smart thermostat, which add another five apps to my phone. Fortunately, Alexa can control my thermostat and two of my four brands of cameras.

Another concern I have about Wi-Fi smart home products is security. In my old X10 smart home, it would be hard to hack my home unless someone physically plugged into a power outlet (kind of like the superior security of wired Ethernet compared to Wi-Fi). It might be possible to send or receive the power line signals in an adjacent house, but unlikely. A bigger concern is that the apps or servers of the many product vendors and Amazon might get hacked. As long as I'm only controlling lights (and not my chipper/shredder), the biggest hack risk is probably to my privacy.

One good reason to phase out my X10 stuff is batteries. All of the X10 wireless remotes use batteries. I've had to throw away many remotes over the years because the batteries in them (AAA, AA, or 9V) had leaked. Almost all my new smart home devices use house power. While cords can be a nuisance, corded devices don't die from leaking batteries.

Smart home technology is beneficial if it makes your life better. A prime task my X10 system used to perform was to make our house look occupied when we were away on a trip. Though we travel much less in COVID times, I can do that with my Wi-Fi smart home devices, though I must set it up using three phone apps.

Recently I've been improving my life through light control in the mornings. I normally get up for work at 4:30 AM, while my wife usually sleeps in until after I've left the house. I try to keep quiet and keep lights off so I don't wake her, but have found it can be dangerous to walk around the house (especially down the stairs) in the dark. I have now set a light in my office to come on about 5 minutes before I would come out of the bedroom, so I have at least a little light to guide me. I've programmed another lamp downstairs to come on a little later so that after I've taken my online COVID health assessment for work and checked my emails, I can go downstairs and see the stairs. I could tell Alexa to shut off the lights behind me, but my wife might hear that. Instead, I use the video screen on my new 5" Amazon Echo Show to silently turn off those lights. I can even turn up the heat on the thermostat a bit so my wife will have it a bit warmer when she gets up, and then set the thermostat back down on my smartphone when I get to work.

With X10, my home over the years may have been smarter than most. Now with these improved smart home devices replacing X10, my home has gotten even smarter. With my smartphone, Amazon Echo, and Echo Show, I can control things away from home, or at home by voice or by touch. With voice control and touch control of my home, what can be next? I wonder if Jeff Bezos is working on Amazon Echo Think?

Greg

Some Useful Windows 10 Features

By David Kretchmar, Computer Technician
Sun City Summerlin Computer Club
<https://www.scscc.club> — dkretch (at) gmail.com

While many users consider Windows 10 the most complicated operating system Microsoft has come up with yet, it does contain a lot of handy new features. Some of these have been present in some form since the beginnings of Windows, and others have been introduced by Microsoft's newer versions of Windows 10. I personally think Windows 10 is by far the best version of Windows ever, for the built-in security if nothing else. I have never had to remove a virus from an operating system running Windows 10 with Windows Security activated and current, which are the defaults.

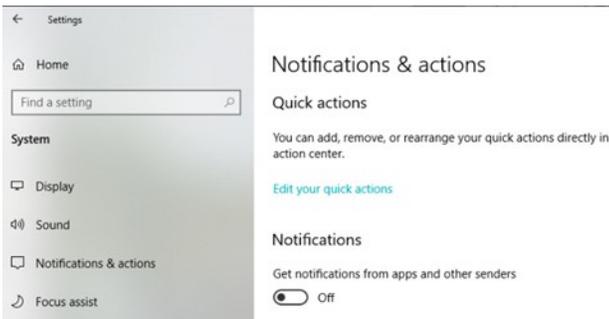


Notifications

Windows provides users with popups notifying users of a system or news event. These and pretty much all popups provide a minimum of useful information and are more annoying and distracting than anything else.

Many Sites visited while surfing the Internet will display a popup offering to send you notifications of certain events. I recommend you "Just say no" to this offer, unless the notifications are for something you deem important. Notifications can also come from your system, i.e. you might get a notification that Windows security has completed a scan finding nothing.

Most users would be best served by turning off notifications completely, and the newer versions of Windows 10 make this easier than ever. Click (clicks are always left-clicks unless otherwise indicated) on the Notifications icon at the far right of your Taskbar, then click on Manage notifications at the top right side of the window that appears. You are in the Notifications and actions section of Settings. The top slider switch provides an opportunity to turn off all notifications. Or if you like you can leave notifications on and in the area below the on/off slider, elect to receive or not receive notification from specific sources.



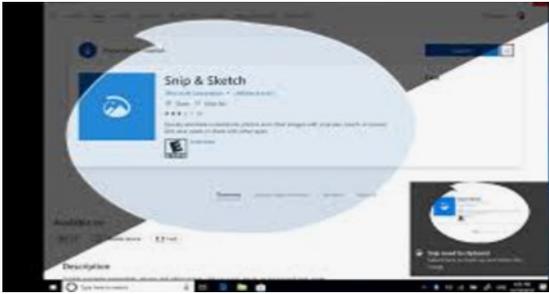
Dictation

If you haven't used voice-to-text software in recent years, you will be amazed at how far this technology has come. Windows 10 has been no slouch in applying artificial Intelligence (AI) to this task. You can now dictate into any application. To turn on dictation in Windows 10, hold down the Windows logo key near the lower left-hand corner of your keyboard and press the letter H on your keyboard. A microphone indicator rectangle will appear at the top-center of your screen.



Just place your cursor in any field ready to receive text (like a Word document you are creating) and start talking. Now with a little practice you don't have to deal with keyboarding; you can dictate your content, just like I did for this sentence. Period.

Snip & Sketch Tool



The snipping tool has been in Windows 10 for a number of years, but until recently it couldn't compete with third party screen capture software.

Snip & Sketch is Windows' newest, best approach yet to capturing all or part of an image on your screen.

Start by holding down the Windows logo key on your keyboard and pressing Shift and the letter S. This creates a small dialogue bar at the top of your screen where you can choose from rectangular, free form, square, or full screen capture. Choose the shape of your clip, hold down the left mouse button and drag it over the area you want to capture. Let go of the mouse button and the clip will be saved to your clipboard. If you go directly to your destination, right-click and select paste.

Clipboard

That Snipping Tool example is the perfect segue into another valuable feature of Windows 10, the clipboard. Many of us might have forgotten that all items copied into the clipboard stay there until we reboot our system. Hold down the Windows logo key and the letter V to see a listing of all items, text and graphics, that has been copied into the clipboard. Just click on any item listed (even if you copied 10 subsequent items, and that becomes the current item to be pasted.



The Day the Music App Died

Google's Play Music app is gone on some Android devices, and soon will be completely gone
By John Krout, Writer/Presenter, Potomac Area Technology and Computer Society
www.patacs.org — krout75 (at) yahoo.com

INTRODUCTION

I am a music collector. I have a large collection of audio CDs; roughly 1,600 songs are on the micro-SD card in my Samsung Galaxy S10 phone. I bought that phone in late 2019, and my carrier recently upgraded the phone's Android OS to version 11.

I started my Android experience on a Galaxy S5 phone, which I still own. That phone runs Android 6. I also own two Galaxy tablets, a recently purchased S5e running Android 10, and a much older A model running Android 8.1.0.

On February 1, 2021, I started the Play Music app on my Galaxy Tab S5e. The app displayed a screen stating that Play Music is "no longer available". The same announcement recommended installing the YouTube Music app.

You can see that screen in **Illustration 1**.

WHY I WON'T USE THE YOUTUBE MUSIC APP

YouTube is owned by Google. The intent of the YouTube music app is to play music stored "in the cloud".

There are three reasons why that cloud storage approach is not ideal for me.



**Google Play
Music is no
longer available**

You can still transfer your library,
including playlists and uploads, for a
limited time

[TRANSFER TO YOUTUBE MUSIC](#)

[MANAGE YOUR DATA](#)

First, that network-intensive method is a classic way for a dedicated fan of music to run into the ceiling on cell network data usage very quickly each month, with financial penalties for exceeding the ceiling, if your carrier contract has such a limit.

Second, despite claims that music stored in the cloud is available wherever you go, there are vast stretches of the US where data service is minimal or is completely absent. Drive through any mountainous area and that becomes obvious very quickly. With 5G, which has a much shorter range than 4G, that problem will be even more acute. The mountains will be the last place carriers build the extra towers necessary to make 5G work on every mile of interstates. Don't count on that to happen on other mountain highways in the next ten years.

Third, there is a privacy issue. Music stored and accessed in the cloud is an invitation for the cloud storage provider to learn about one's music preferences and monetize that knowledge, such as through endless ads.

WHAT GOOGLE DECIDED TO DO

I went to my desktop computer and googled the status of the Play Music app. I learned that, in 2020, Google announced that the company would no longer support the app as of December 3, 2020.

That end of support, by itself, does not cause the app to stop working. I use the Play Music app daily on my S10 phone. So far, the app still works just fine.

The fact that Google **disabled** the Play Music app on my Tab S5e tablet was quite an unhappy surprise. Even with the music indexing quirks in Play Music, which I wrote about a couple of years back, the Play Music app was reliable and reasonably easy to use.

I surveyed the fate of the Play Music app on my other Android devices. On the S10 phone, running Android 11, the app can still play my music collection stored on the phone. On the S5 phone, running Android 6, the app can still play my music collection stored on the phone. On my Galaxy Tab A, the app acted like the app on the Tab S5e, displaying the no longer available screen.

I expect that the end is near for the Play Music app on my current S10 phone and my old S5 phone.

THERE ARE MANY OTHER MUSIC PLAYER APPS

Of course, I went to the Google Play Store and looked for music player apps. That category is a huge, bewildering forest. The Play Store app recommended some alternative searches, including "music player no ads", so I tried that. Ads are another unwelcome use of cellular network data.

For each app, I looked at the review rating average, the number of reviews, and the total number of downloads. I also made sure that each was capable of playing music stored on the phone, not in the cloud.

Musicolet has been downloaded 5 million times and has a 4.7 rating average in almost 120,000 reviews. That is a very strong rating average. So I downloaded that app on my Tab 5e.

When I started the Musicolet app and worked through its setup steps, I learned that it has one feature I liked immediately. The app provides the option to specify one or more particular folders on the phone or tablet in which to find sound files. I chose the folder on my micro-SD card where I parked my 1,600+ songs (1,637, according to Musicolet). The advantage is that, unlike Play Music, the app will ignore my voice memos that are stored in a different folder. Play Music app automatically threw in all my voice memos, which are far less entertaining than my music.

Musicolet also offers a feature to play songs in random order, sometimes called Shuffle Play, just like the Play Music app. I use that constantly so that my music sounds like an FM progressive music station in the 1970s. I have other music on my phone as well, from the 1950s through the 2000s.

Another ad-free music player app with just about the same attractive stats is **Pulsar Music Player**. This one claims to support use on car sound systems via Android Auto.

Most sound systems in recent cars already provide Bluetooth capability. If you only want to access phone or tablet music, and you do not have the Android Auto feature in your car, you can play music from your phone on the car stereo via Bluetooth. Android Auto offers other advantages.

THE BOTTOM LINE

I hope other app publishers do not follow this disappointing Google precedent. When support is ceased, let the user base continue to enjoy the capabilities of the app, at least until an Android OS update breaks the app.

ABOUT THE AUTHOR: John Krout has been writing about creative uses of personal computers since the early 1980s. He worked for decades as a C and C++ developer for contractors of several federal government agencies. After more than a decade as a documentation writer for one such agency, he quit in April 2020 and now writes whatever he wants to. He resides in Arlington VA with his son, many computers and cameras, and too many cats.

Thoughts from a Clicker

By Tiny Ruisch, Vice President, Cajun Clicker Computer Club
February 2021 issue, CCCC Computer News — www.clickers.org — [office \(at\) clickers.org](mailto:office@clickers.org)

Last week at one of my Zoom meetings, someone asked me if I had ever used IrfanView, an image viewer, and editor. I replied that it was one of my go-to programs about ten years ago. This chance remark gets me thinking about some of my computing experiences over the years. Technology has sure changed a lot. One of my first computer memories was when I was still in high school and UNIVAC was in the news. No one had any idea what the thing was good for. The census used one to somehow make counting the population easier. It was a different world back then and nobody much cared about a machine that was bigger than the family car and needed a special air-conditioned room.

One thing that interested me was the Texas Instruments pocket calculator. My daddy was a feed salesman and the company that he worked for provided him with one of these expensive machines. I remember him getting it out to show us how he could add 2 and 2 without making a mistake.

When I joined the Navy, I had my first experience with using a computer. I got to run the keypunch machine. If I made a mistake, a ship could easily get 10,000 pounds of butter instead of 1,000. Back then, the Navy paid us in cash. In later years, our paychecks were an IBM computer punch card. Now, most employers don't even issue checks. It's all done electronically.

In the late 1970s, computers started to catch on. IBM was the company that created the home market. Their 8086/8088 weighed about 30 pounds and had a whole megabyte of random-access memory. It blazed along at a speedy 4.77 MHz. Other companies that built computers soon started advertising themselves as IBM compatible. If you worked for IBM, you were required to wear a tie.

This is also the era when many of us hobbyists started building our first computers. Zenith Heath Kits were all the rage. They didn't work any better, but we were smarter because we built our own.

The operating system of choice in those days was PC-DOS. There were many other ones, but the home market was mainly CP/M or one of the DOS systems from Apple, Atari, or Commodore. In the early 1980s, a fellow you may have heard of buying an operating system called 86-DOS which was also known as Q-DOS (for Quick and Dirty DOS). Bill Gates later renamed it to MS-DOS for the company that he founded.

I'm pretty sure that Microsoft is still in business today.

Home computing started to take off in the '80s when Radio Shack introduced the Trash 80 (oops. I meant TRS 80). Apple's home computer was the Lisa and Texas Instruments had something called the TI-99.

I remember the first computer I bought. It was a Commodore VIC20. I loved that computer with its 5 KB of RAM and the data cassette storage, even though it often took 3-4 minutes to load a program. Incidentally, the VIC20 was the first home computer that sold a million units. In later years the Commodore 64 was even better.

The first innovative computer program to be sold was the spreadsheet VisiCalc. Like so many other successful things, clones like Lotus 1-2-3, SuperCalc, and Microsoft Excel were soon on the market. Did you know that Microsoft's Excel was first introduced for the Apple Macintosh? It was only later that it was ported to Windows. WordStar was the first commercially profitable word processor.

The real software revolution was the games. I don't think you could walk 50 feet without seeing somebody playing Space Invaders, PAC Man, or one of the many variations of Pong. I'll confess that my favorite games were made by Infocom. They specialized in "interactive fiction" games. I still remember their advertising slogan, "We put our graphics where the sun don't shine." Graphics adapters later put this type of adventure game out of business. Their first game was Zork which debuted in 1980. In the old days, the only decision to be made when you bought a monitor was whether to have green or amber output. The only sound you could hear was the tinny beep for the operating speaker. The only mouse in the computer room lived in the wall. Printers were all dot matrix and printed about 30 characters a minute.

Of course, one of the biggest changes in computing has been the internet and the use of e-mail. I've heard that e-mail was invented by a Nigerian that had a lot of extra money to spend. The browser choices were Mosaic or Netscape. We've come a long way from logging in to the Bulletin Board.

I'm going to shut up for this month. Please remember that I've just written about some of my computing memories, so the facts may not be 100 percent correct. I'm just amazed at how far technology has advanced.

Thanks for reading.

Vow to Maintain Your Home Network

By Kurt Jefferson, Editor, Central Kentucky Computer Society

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Now that 2020 is finally, finally, finally over, it might be time to reflect on how well our home networks held up to the strain of constant use last year.

COVID-19 is keeping many of us at home and connected via Zoom, FaceTime, and Skype. That's putting sometimes creaky Wi-Fi Internet networks under the microscope.

And many of us have discovered our sometimes-outdated routers, modems, PCs and Macs, iPads, keyboards, mice and trackballs, and other equipment aren't faring too well under the strain. (November's CKCS newsletter reported that iPad sales in America rose by 31% as of mid-summer as plenty of folks replaced old equipment with newer technology.)

In March, Forbes reported that Internet use in America climbed by as much as 70% as more of us were forced to work at home, students activated distance learning, and streaming (services such as Netflix and Amazon Prime) surged by at least 12% while demand for TV via cable plummeted.

Cable TV subscriber losses in 2020 could top the population of Chicago and Houston combined, headlines one article from BGR.com. And, as NoCable.org writes, "As many Millennials enter the workforce, they simply do not see the benefit of paying over \$123 a month on cable service and are colloquially referred to as 'Cord Nevers'."

So if you or family members are using your Internet network more than ever, you have plenty of company. Just as your car needs maintenance, so does your Wi-Fi network. Yet, many of us don't consider this until our home Internet stops working.

Consider the following:

If your Wi-Fi router is more than four or five years old it might be time to replace it. A 2012 PCWorld article says heat could be the real culprit. Wi-Fi routers tend to get very hot. If your Internet connection is getting slower and slower or drops connections more often, heat might be damaging your router's internal parts. Try pointing a small fan on your router and see if your Internet performance improves.

If your cable company provides you Internet service, consider buying and installing your modem rather than paying the cable company to use theirs. That's one way to cut your costs. The Wirecutter has tested several top models. Read their reviews to see which Wi-Fi router might fit your budget and home.

I checked The Wirecutter before buying a new Wi-Fi router late last year. My six-year-old Apple Extreme Base Station was failing. (Apple no longer makes Wi-Fi routers.) Internet connections were periodically dropping, web pages loading more slowly, and the connection speed was dropping. (I use a Mac app called WiFi Explorer from the Mac App Store to get an overview of how well my home Internet network is functioning. WiFi Analyzer for Windows is another good tool.)

If your home is plagued by Internet dead zones, consider installing what's called a WiFi mesh networking kit. The Wirecutter spent more than 200 hours reviewing 24+ mesh WiFi networking kits before it chose its top pick.

Update your WiFi router's firmware. "Firmware" is one of those words that cause some folk's eyes to glaze over. You might as well be talking to an American audience about camels: Or what's the difference between a Dromedary camel and a Bactrian camel? But as Tom's Guide has repeated over and over, "Your router is the most important part of your home internet setup. It's also probably the most vulnerable." Why bother? Well, as Tom's Guide writes, "...Updating your router's firmware is a pain, but you've got to do it." A firmware update can protect your entire home Internet network from hackers. Just do it. Enough said.

Internet Security 101: Wow. Broadband Search outdid itself when it published this website offering some of the best advice on keeping your home Internet safe and secure. You'll read tips such as pick better passwords and choose to use a virtual private network (especially when you're using an iPad or laptop.)

Turn on your Mac's firewall. If your firewall is off, turn it on. Visit System Preferences, click on Security & Privacy. There's a horizontal panel at the top of the window. Click on Firewall. Then, make sure there's a green dot next to Firewall: On. Macs come from the factory with this turned off. Switch it on.

Turn on your Window's firewall. (Make sure it's not disabled.) security.com tells you how to "enable your Windows" firewall. Make sure you leave it on.

Run antivirus and anti-spyware software. Learn more from PCMag and its article, "Do You Really Need to Buy an Antivirus App or a VPN Anymore?" (Obviously, the answer is YES.)

Protect your smart speaker. (You know, speakers that react to your verbal commands.) If you've got one of the many smart speakers (Amazon, Google, Apple, and Sonos all make smart speakers) in your home, be aware they can be hacked. As Norton notes, 39-million Americans owned smart speakers in 2019. Norton's website offers ten tips to keep your smart speakers secure.

Use a Passcode, Touch ID, or Face ID on your iPad & iPhone. It's a pain to enter a series of numbers, touch the home button or allow the camera to snap your headshot every time you use your tablet or smartphone. But consider this: An iPhone and iPad are among the two top stolen electronic devices in America. Think about it. Turn on "Find my App" on all of your Apple devices: Macs, iPhones, iPads & iPod touch. A passcode can save you plenty of grief, especially if you use your iPad or iPhone for online banking.

Dan's Desk—Windows Blue Screen of Death

By Dan Douglas, President, Space Coast PC Users Group
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At a recent learning center meeting, we reviewed what that dreaded Windows blue screen of death (BSOD) meant when it stated it was performing a system dump. Let me explain that in detail here:

When the operating system, which is Windows for most of us, encounters an abnormal or crash situation where it doesn't have a pre-determined way to recover, the BSOD will usually occur. In order to provide details about what programs were loaded at the time of the crash and what actions or clicks may have been processing, a system dump file is created. A system dump file is used by Microsoft to fix potential situations that caused the BSOD, from happening in future releases of Windows.

This is why Windows gets regular updates automatically from Microsoft. Each of those updates is designed to improve or correct the operation of different components of Windows or its applications. In those cases where the situation is so bad Windows can't even present the BSOD, the whole PC will just restart.

By default, Windows is set to create a dump file when a crash situation is encountered. If you do not want to create a dump file you can adjust that setting. Depending upon the version of Windows 10 that you're on, the manner to get to the advanced system settings tab can differ. This set of instructions will work on any:

- 1) Click on the control panel - if you can't find the icon, use the Windows 10 search bar at the lower left of your screen to locate it
- 2) Click on the System app
- 3) Click on Advanced System Settings or Advanced item
- 4) Click on Startup and Recovery - Settings
- 5) Under System Failure – check Write an event to the system log and Check Automatically restart
- 6) Where the Write debugging information is, click on the drop-down arrow and choose (none)

With these settings, your computer will not create a system dump file but will record an error in your system log file which is much quicker. I'm sure Microsoft will get lots of system dumps with similar situations as yours, without you having to clog up your hard drive with dump files to be uploaded to Microsoft.

Knowledge is Your Best Defense—Windows Defender and Firewall

By David Kretchmar, Computer Technician
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There is a lot of confusion regarding Windows computer security. Some reviews of anti-virus software will state that **Windows Defender** is very poor, while others will say that it is very good. I would personally call it entirely adequate while lacking some features. Microsoft Windows Defender originally was considered pretty weak. However, over the past 5 years, beginning with Windows 8 and continued in Windows 10, Microsoft has upped its game. Windows Defender, through several upgrades to Windows 10 and weekly updates, has become a real challenge to malware developers.

Windows Defender was originally known as Microsoft Security Essentials back in the days of Windows 7, when it was offered as a separate download. Now it's built into Windows 10 and is enabled by default.

I've been using only Windows Defender and Windows Firewall from the day I moved to Windows 10 in 2015, and I have not found a virus infestation in any of my four computers.



Different protections

There are different types of malware protection available which many people wrongly think are the same and label it under antivirus. Within antivirus software there are multiple parts; the two major ones are "Scan time Detection" and "Run time Detection".

Scan time detection detects malware based on analyzing an application's software executable and is only as good as its latest virus definition updates. Scan time protection depends on recognizing known malware signatures and types and uses that information to determine an executable's validity (or bogusness). Virus definitions need to be periodically updated so its definitions include the latest discovered malware.



Run time detection detects malware based on the way it runs, system functions it calls and system files it accesses. The run time A/V software then analyses this information to determine whether the application is malicious or has similarities to known malicious software. This is also known as heuristic analysis. Heuristic analysis is incorporated into more advanced security software to detect new threats before they cause harm, without the need for a specific signature. New viruses are called "zero-day". The best protection against these is a real-time scanner which analyzes how software behaves on your PC. Recently this is one area where Windows defender has excelled.

The firewall

These days the firewall is a major part of the security system, preventing unauthorized connections to your system by malicious software. The **Windows firewall** does the exact same job of blocking incoming connections as any third-party firewall. Third-party firewalls like the one included with Norton may generate pop ups more often, informing you that they're working and maybe asking for your input. The Windows firewall just quietly does its thankless job in the background.



Windows firewall is enabled by default and should still be working unless you've disabled it manually or installed a third-party firewall. You can find its interface under Settings, Updates and Security, Firewall & network protection.

You are the best defense

Some experts feel that if you know how to use a personal computer, what to browse on the web, where to click, where not to click, which software to install and which link to click then you don't need an anti-virus software. But you need to always be aware. Think before you click on anything, and never download third party software onto your system unless you understand exactly what it will do (generally, you don't).

Free alternatives to Windows Defender

If you don't feel Windows Defender is adequate, and you don't want to pay for protection, I suggest you look at the Avast or AVG free antivirus editions. Both can do a good job of protecting your computer. These third-party products offer some features that Windows Defender lacks, such as on-line monitoring for potential exploits. They are available from:

Avast: <https://www.avast.com/en-us/index#pc>

AVG: <https://www.avg.com/en-us/free-antivirus-download>

I have used both and they are very good.
