



Midland Michigan

# BITS AND BYTES

SEPTEMBER 2021

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

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## **GENERAL CLUB MEETING VIA ZOOM**

**Wednesday, September 22, 2021  
6:00 P.M.**

## TiVo Stream 4K

By Carol Picard, Midland Computer Club  
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TiVo Stream 4K is a streaming device, like Roku, Fire TV, or Apple TV. It runs on Android TV with Google Assistant and access to Google Play. Android TV is a version of Android originally designed for televisions.

Chromecast is included in the TiVo Stream 4K, which none of the other streaming devices currently offer.

Each streaming device presents content differently and there are differences in how the menus are navigated. While many streaming services are available, e.g., Netflix, sling, hulu, etc. the TiVo Stream does not currently offer Spectrum app (for Spectrum Television subscribers), or DIRECTV STREAM app (formerly AT&T TV NOW and AT&T TV). If you subscribe to a streaming service or services, check if they are available on any streaming device you are considering.

The pamphlet included in the Tivo Stream 4K package had three easy steps for connecting the device but there was no mention that a Google account and a TiVo account are both needed.

If you don't have a Google account, create one before proceeding with setup.

Setup process displays a code on the television which needs to be entered in your TiVo account. Setting up a TiVo account and being logged into the TiVo account from a tablet or computer before beginning setup is a good idea so you are prepared for this step (<https://tivo.com/myaccount>). When creating a TiVo account, use your Google email address but create a different password for the TiVo account. When logged in to your TiVo account, you may be prompted to sign up for sling or other streaming subscription services (with monthly charge) but can bypass that step.

During set-up you will be shown images of different movie genres or TV show, asking which you prefer to watch. Didn't realize I could skip that and should have as none of the choices were good options for me and now, under recommendations, it shows options I'm not interested in.

When setting up the TiVo Stream 4K, it correctly identified the make of television and automatically programmed the TiVo remote so the television can be turned off/on using the power button on the TiVo remote. Changing channels and controlling volume also work from the remote. However, while the Input button on the remote displays the Input menu on the television, was unable to move between or select Input options using the TiVo remote. This may just be the particular TV.

Google Assistant button/microphone on remote can be used to Search by voice across all apps to find movies/shows. Using microphone requires allowing Google to share requests with eSTREAM4K and your TV apps, e.g., Netflix, Amazon Prime Video, tubi, etc. If you decline sharing, Google Assistant will be disabled. Can change the setting in TiVo TV settings.

<https://explore.tivo.com/how-to/stream-4k/remote>

Depending on what screen is displayed on television, there are several ways to open/exit the TiVo Stream Menu, which appears on left of screen. Press TiVo button or press left side of black ring. May have to press button more than once. Back arrow button goes back to previous screen but, if there is no previous screen, it also opens/exits TiVo Menu.

Home  
My Shows  
Guide  
TV shows  
Movies  
Sports

Kids  
My Services  
Apps

Search  
Settings (TiVo Settings)

Home, in TiVo Menu, shows movies and shows under categories such as Trending, Recently Watched, Greatest Sitcoms of All Time, etc. When a selection is highlighted, it indicates all Services it is available on, even if you don't subscribe to the service, e.g., Peacock, Vudu, Prime Video.

Guide is accessed by pressing Guide button or selecting Guide from TiVo Stream Menu. When watching an app, can access Guide by pressing the TiVo button (silver button with TiVo icon) which also exits you out of the app.

When in the Guide, can filter what is displayed by pressing top of black ring to display the following options along top of screen.

All Categories  
Movies  
Kids  
Sports  
News  
Music  
On Demand

Tap right and left side of black ring to move through options. Press OK to select an option. Press bottom of black ring to hide above options.

When I first accessed Guide listing, every channel I tried prompted to sign up/subscribe. Discovered that in the Guide table, in the top, leftmost square next to the Channel names, it shows the Service the channels are under. The channels I was looking at were all under the Service sling, requiring a sling subscription. Scrolled down to Pluto TV section and all channels under Pluto were free.

My Services, in TiVo Menu, under Subscription heading, shows icons for several Services, e.g., sling, Netflix, hulu, etc. with a circle with checkmark in upper right corner of each icon. If you already subscribe to any of the Services, or want to subscribe, press OK on the Service icon, then either log in with your account information to link the service to the TiVo Stream or subscribe to the Service. I did not want to sign up for any Services, so scrolled to each Service, pressed OK button on remote to remove checkmark. Once all the Services were unselected, the Guide only showed channels available for Pluto and TiVo+.

There is a Free section under My Services and, with the exception of Locast, I left all those Services selected. Locast (<https://www.locast.org/>) provides local channels, if you live in a geographic area where Locast is available. It is not available in my area. Locast is a not-for-profit service that accepts donations. If you don't donate, sounds like you will receive recurring prompts to do so.

Apps, in TiVo Menu, is used to access apps or games installed from Google Play using Get more apps or Get more games. Apps can be uninstalled, re-ordered, etc. To show icon options, press and hold OK button on remote (black, round button inside black ring) until options appear. To exit options without taking any action, press back arrow button. To uninstall an app (some can't be uninstalled), highlight Uninstall and press OK. To move an app icon to another location, highlight Move, press OK button, use top, bottom, left, right of black ring to move icon to desired location. Press OK to confirm. Before selecting another icon, press the back arrow button until Get more apps and Get more games are visible on screen.

Search, in TiVo Menu, allows using on-screen keyboard to search for movies, actors, etc.

When viewing Pluto channels the buttons on the remote worked differently depending on whether Pluto channels were accessed from Guide or from Pluto TV under Apps. Once you've watched a channel from the Pluto TV App, next time you launch the app it automatically goes to the last channel watched.

Like other streaming devices, e.g., Roku, Amazon Fire Stick, there is no button to turn it on/off. It will go to sleep after a period of time. If you are not using it regularly, might consider unplugging it. Recommend returning to the TiVo Home screen before switching to a different input or before turning off the television, so you aren't streaming shows in the background and impacting your ISP data usage. If TiVo Stream 4K is on a screen with nothing streaming, e.g., Home or Guide, after 15 minutes it will go into sleep mode and display the Chromecast screensaver, which shows the current time and scrolls through different background images. As a test, I set the TiVo Stream to stream a channel from Pluto TV. It streamed continuously for four hours. Did not use the remote during that time. After 3 hours and 45 minutes, a notice displayed on the screen asking "Still there? – Press OK to continue.". Did not respond and, after 15 additional minutes, streaming stopped and a static screen displayed. After 15 additional minutes with no response, it went into sleep mode, displaying the Chromecast screensaver.

There is an Android TV Home screen but have not investigated what options it provides.

## Remote Control Buttons



Chromecast feature works with Android tablet, Android phone, Chromebook and Windows PC. Documentation indicates Chromecast feature can work on iPhone or iPad but requires installing Google Home and having a Google account.

Can use Chromecast from any TiVo Stream screen, including Chromecast screensaver screen.

To use Chromecast from Android device, start playing video or movie on device and, if the app supports Chromecast, e.g., YouTube, press Chromecast icon in the app and it should find the TiVo Stream. Tap the words TiVo Stream 4K and whatever is playing on your device will play on the television. To stop casting, tap Chromecast icon on device and tap Disconnect. On TiVo Stream remote, press TiVo button to return to TiVo Stream channel list. Chromecast may not work from a browser, e.g., youtube.com but does work with the YouTube App installed on the device.

Using Chromecast from a Chromebook or Windows 10 PC is similar. Default is to cast one browser tab but can be changed to cast entire desktop so anything displayed on the desktop will appear on the television. Instructions below are for casting the desktop. If you only want to cast one browser tab, skip the steps: Source/Cast desktop. Did not test with other browsers.

Chromebook	Windows 10 Edge Browser	Windows 10 Chrome browser
<p><b>Start Casting</b></p> <ol style="list-style-type: none"> <li>1. Click in upper right of Chrome browser window</li> <li>2. Click Cast</li> <li>3. Click Source</li> <li>4. Click Cast desktop</li> <li>5. Click TiVo Stream 4K</li> </ol> <p>Or</p> <ol style="list-style-type: none"> <li>1. Click time (lower right)</li> <li>2. Click Cast</li> <li>3. Click Tio Stream 4K (automatically casts desktop)</li> </ol>	<p><b>Start Casting</b></p> <ol style="list-style-type: none"> <li>1. Click Settings (three horizontal dots) in upper right of browser window</li> <li>2. Scroll to More tools</li> <li>3. Click Cast media to device</li> <li>4. Click Sources</li> <li>5. Click Cast desktop</li> <li>6. Click TiVo Stream 4K</li> <li>7. Can minimize browser but don't close it</li> </ol>	<p><b>Start Casting</b></p> <ol style="list-style-type: none"> <li>1. Click Chromecast icon in upper right</li> <li>2. Click Sources</li> <li>3. Click Cast desktop</li> <li>4. Click TiVo Stream 4K</li> <li>5. Can minimize browser but don't close it</li> </ol> <p>If Chromecast icon not displayed in upper right</p> <ol style="list-style-type: none"> <li>1. Click Settings (three vertical dots in upper right) of browser window</li> <li>2. Click Cast...</li> <li>3. Click Sources</li> <li>4. Click Cast desktop</li> <li>5. Click TiVo Stream 4K</li> <li>6. Can minimize browser window but don't close it</li> </ol>
Chromebook	Windows 10 Edge Browser	Windows 10 Chrome Browser
<p><b>Stop Casting</b></p> <ol style="list-style-type: none"> <li>1. Click time (lower right)</li> <li>2. Click Stop</li> <li>3. On TiVo Stream remote press TiVo button to return to TiVo Stream channel list</li> </ol>	<p><b>Stop Casting</b></p> <ol style="list-style-type: none"> <li>1. Click Chromecast icon in upper right of browser window</li> <li>2. Click TiVo Stream 4K</li> <li>3. On TiVo Stream remote press TiVo button to return to TiVo Stream channel list</li> </ol>	<p><b>Stop Casting</b></p> <ol style="list-style-type: none"> <li>1. Click Chromecast icon in upper right of browser window</li> <li>2. Click TiVo Stream 4K</li> <li>3. On TiVo Stream remote press TiVo button to return to TiVo Stream channel list</li> </ol>

To use Chromecast feature, both the device and the TiVo Stream 4K must be on the same WiFi network. My router supports a Guest network which doesn't see other devices on the network and a primary network which can see/communicate with other devices on the network.

Initially set up the TiVo Stream on Guest network, and tablet was on my primary network. To change the TiVo Stream network, instructions on TiVo website indicated to go to Android TV Home screen, with no indication of how to access that screen. Was able to chat with a support person. That chat session went very well. Asked how to get to the Android TV Home screen was told to hold down the button with the white circle and then navigate through the prompts. Had to look closely at the screen to find the Setting option (gear icon) near upper right of screen because of the background. After finding option to change network was going to end the Chat but support person asked me to go through the process of changing the network to make sure it worked. Change was successful and really appreciated them taking the extra time to make sure it worked.

President's Corner

## How Reliable is Reliable Enough?

by Greg Skalka, President, Under the Computer Hood User Group  
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Google defines reliability as consistently good in quality or performance; able to be trusted. We all want our technology to perform well, as we depend on it more and more in our lives. In placing a call, turning on our lights, driving to the store, checking our bank balance, or taking a commercial flight, we all want (and perhaps expect) 100% reliability in our experiences with technology. Nothing can be completely dependable, however, and no matter what we expect, tech failures happen. Reliability can be regulated by government agencies, specified by standards, or simply provided “as-is” by the manufacturer. In the end, it is up to each of us to decide if the reliability levels we get meet our needs.

Most large companies now use an ISO 9000-based quality management system to demonstrate their ability to provide quality products and services that consistently meet their customer’s needs. The basics boil down to ‘say what you do’ and ‘do what you say’. Unfortunately, for the customer, the issue is often that not enough is said, and the only standard the customer has is their expectations about quality and reliability; these usually wind up being different from the vendor’s.

I have a lot of smart home devices. Many companies make and support products and systems to remotely control lights and devices in your home. You can control them remotely through an app on your smartphone or tablet, or through an Amazon Alexa or Google Home Assistant device. In addition to immediate control, your items can be programmed to turn on and off in a scheduled manner. The manufacturers portray these smart devices as simple and easy to use, so the consumer might assume they are reliable. Unfortunately, they are fairly complex and sometimes not so reliable.

I’m typically up and out of the house to work well before my wife is awake. To make my workday mornings easier (and safer, especially in the darker mornings of winter), I program lights downstairs to come on just before I would come out of our bedroom. This gives me a little bit of light to help me see when going down the stairs before dawn. I use a Belkin Wemo smart plug, with a family room lamp plugged into it, to give me some of that light. I’ve programmed the ON time in the Wemo app so that at my selected time the Belkin servers send a message over the internet and through my Wi-Fi to the smart plug to turn on. Once I get downstairs, I turn the light off manually with our Amazon Echo Show as quietly as possible, using the screen icons rather than voice control. In this case, the OFF command is sent from my Show over the internet to Amazon’s servers, and then passed to the Belkin servers and back over the internet to my Wemo smart plug.

This seems like a lot of complex communications, but it has worked very reliably over the four months since I set this up. Last week, however, it didn’t do so well, failing to turn off correctly on two different days. On the first day, Alexa could not turn the light off; I had to go into the Wemo app to do it. On another day, even the Wemo app could not turn the light off, as the smart plug appeared as inactive in the app. I finally had to resort to pressing the button on the smart plug to shut it off. In both cases, everything worked fine again after a short time. I was happy to see it working, but was reminded of the engineering saying “Problems that go away by themselves can come back by themselves.”

Though I was not happy that the smart plug worked unreliably those two days, was there anyone I could blame? Perhaps not, as Belkin and Amazon had said I could control my light in this way, but they didn’t say it was guaranteed to work 100% of the time. That it had worked reliably all but two days in four months is in reality pretty good, considering the plug cost only \$20 (and the Echo Show cost \$50).

This brings up one key factor in the reliability equation: high reliability generally costs more. The successful landing of the NASA Perseverance Mars rover last week was a tremendous technical achievement, but it came at a cost of around \$2.5 billion. That kind of money can buy a lot of reliability, however. The NASA Opportunity rover, launched in 2003, cost \$400 million and had a planned mission duration on Mars of around 90 days, yet it continued exploring and communicating until 2018. NASA’s Curiosity rover has been operating on Mars for the last 8.5 years, far exceeding its original 2-year mission life. Hopefully, Perseverance can demonstrate a similarly high level of reliability.

Money can't buy total reliability, however. Since its inception in 1958, NASA has spent over \$650 billion (perhaps \$1.2 trillion after inflation). It has had many great successes, putting 12 men on the moon, exploring all our system's planets with robotic probes, and currently has put five rovers successfully on Mars. It has had some tremendous reliability successes, such as the Voyager 1 and 2 probes that are still providing communications as they leave our solar system. It has also endured tragic failures, the worst of which are the losses of crews of the Space Shuttles Challenger and Columbia, and Apollo 1.

Not everything needs to be as reliable as a spacecraft, but many things, especially where failure would involve loss of life or a high economic loss, require high reliability. Structural items such as buildings, bridges, and tunnels, and transportation items like aircraft, trains, ships, and cars, all need higher safety and reliability standards. You may sit in both, but you justifiably have greater concerns and expectations about safety and reliability for your automobile than for your La-Z-Boy recliner.

One way to mitigate risks when reliability and safety are not deemed sufficient is through back-up systems. Hospitals may add back-up power generators to compensate for a power grid that is not totally reliable. There probably are measures that should have been taken (and now likely will) to harden the Texas power grid against the extreme cold weather it experienced recently.

Our computers hold information internally in rotating magnetic platter hard drives and SSDs, but these are not immune to failure, so prudent users back up that information. Automobile tires can fail for a variety of reasons, so automakers offer several back-up systems, including a spare tire and changing tools, puncture sealant, and run-flat tires. Tire pressure monitoring systems are now required for all automobiles, as a safety backup.

We have continued to add safety features to motor vehicles over the years to reduce the number and severity of accidents. Safety glass, power steering and brakes, seat belts, airbags, energy-absorbing bumpers, and rear back-up cameras all add safety to cars through technology. Despite these enhancements, however, over 16500 Americans died in motor vehicle traffic crashes in 2020. Now automakers are looking to add self-driving technology to our highways; will it be safe and reliable enough?

Sometimes reliability is not as important as other factors, such as cost or convenience. Often new technologies are not as reliable initially, but in time may improve (or wind up being shunned by consumers). I like my Amazon Alexa devices, but I don't always get the responses I expect. Considering the complexity of the system, low cost to me and less than a critical need for the information, a less than perfect performance is acceptable. Alexa may not always provide the information I'm looking for, but I'm easily able to recognize this and so am not really harmed by her "incompetence".

Some kinds of unreliability are more acceptable than are others. If your smart home lock is unreliable, it might be better if it occasionally fails to unlock when you get home, rather than sometimes not locking when you leave. It is the same with computer security; it is better to err on the side of being too restrictive than too permissive. Users can put up with only so much in unreliable access, however. New technologies such as fingerprint scanning and facial recognition for login, though more convenient than passwords, won't gain wide acceptance if valid users are not reliably recognized. If the convenience difference is great enough, however, users might be willing to accept having to scan multiple times for access.

Reliability in our technology is important, but the need for it varies with the product and the potential downsides. Our sensitivity to quality issues should be greater for a Boeing 737 MAX airplane than for a wireless router. We as individuals and as a society will have to weigh the cost, quality, and risk trade-offs to determine in each case how much reliability is enough.

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## Tiles – The Other GUI

By Dick Maybach, Brookdale Computer User Group  
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All of us, whether our operating system is Windows, OS-X, or Linux, use a graphical user interface that can be called WIMP, for its defining features: Windows, Icons, Menus, and Pointer. There is another system, called tiles, that some prefer because they can open, close, resize, and move between windows using only the keyboard. They argue that continually moving their hands to the mouse slows their work. The first window screen I saw, years ago, was a tiled one running on Unix.

When we use a particular method for a long time, we begin to think of it as the only method, which of course is seldom true. If you'd like to gain some perspective by experimenting with tiles, you can try Regolith Linux, <https://regolith-linux.org/>. Be warned, however, that even though it's just Ubuntu with a different user interface, it's probably very different from anything you've ever used, and brace yourself for some adventure.

Regardless of whether you ever use it, knowing a bit about tiles will give you some perspective on user interfaces. The figure shows the desktop that results when you first boot Regolith and hit the key combination <Win><Shift><?>, where <Win> is the Windows key on a PC.

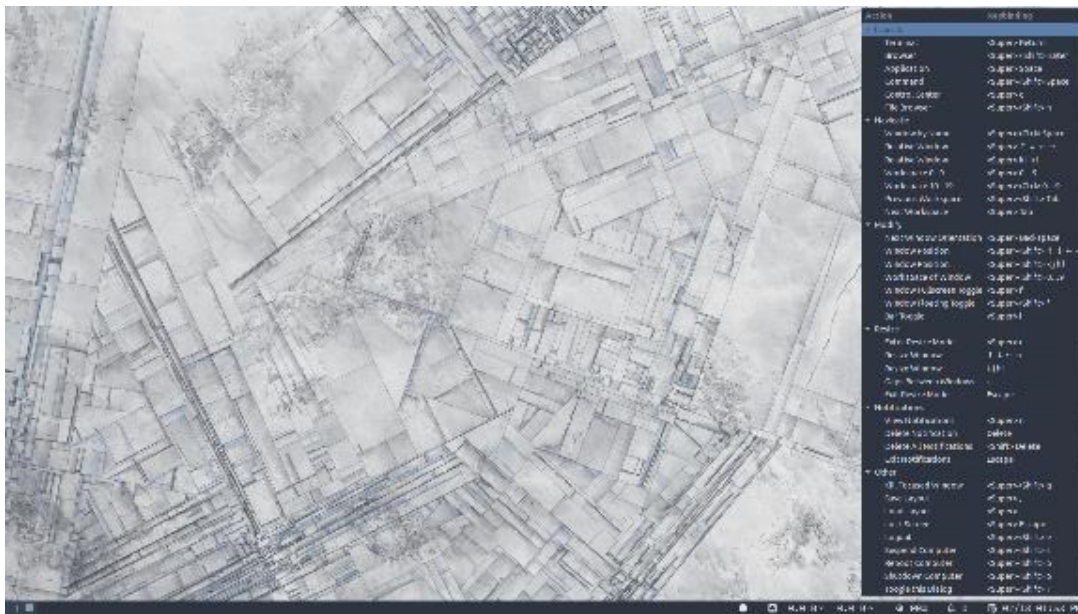


Figure 1. Initial Regolith Desktop with its Help Panel.

This key combination brings up the help panel, shown on the right in Figure 1. You can dismiss it with the same key combination you used to call it. (You'll be referring to this often when you first begin using Regolith.) The first application opened occupies the full screen, as shown in Figure 2, where the browser is looking at the Regolith website.



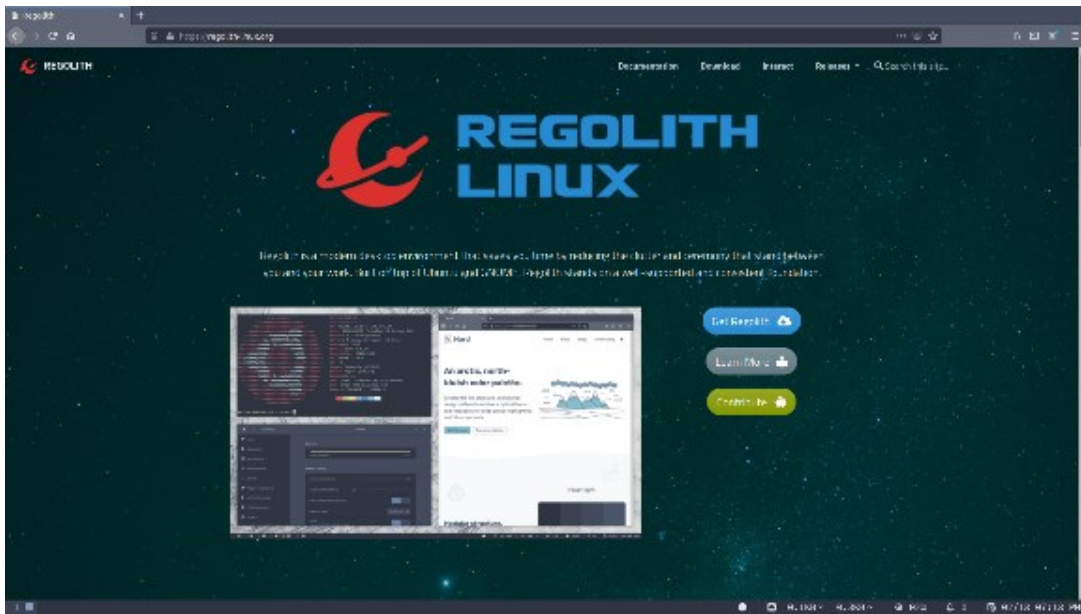


Figure 2. One Application Open.

When the second application opens, it splits the screen with the first one; you can choose whether the split is horizontal or vertical. Figure 3 shows the result of doing two splits. With Firefox open, I first split the screen vertically so the file manager occupied its bottom half. Then I split the file manager tile horizontally to give its right half to the LibreOffice word processor. Finally, I increased the sizes of the browser and the LibreOffice tiles.

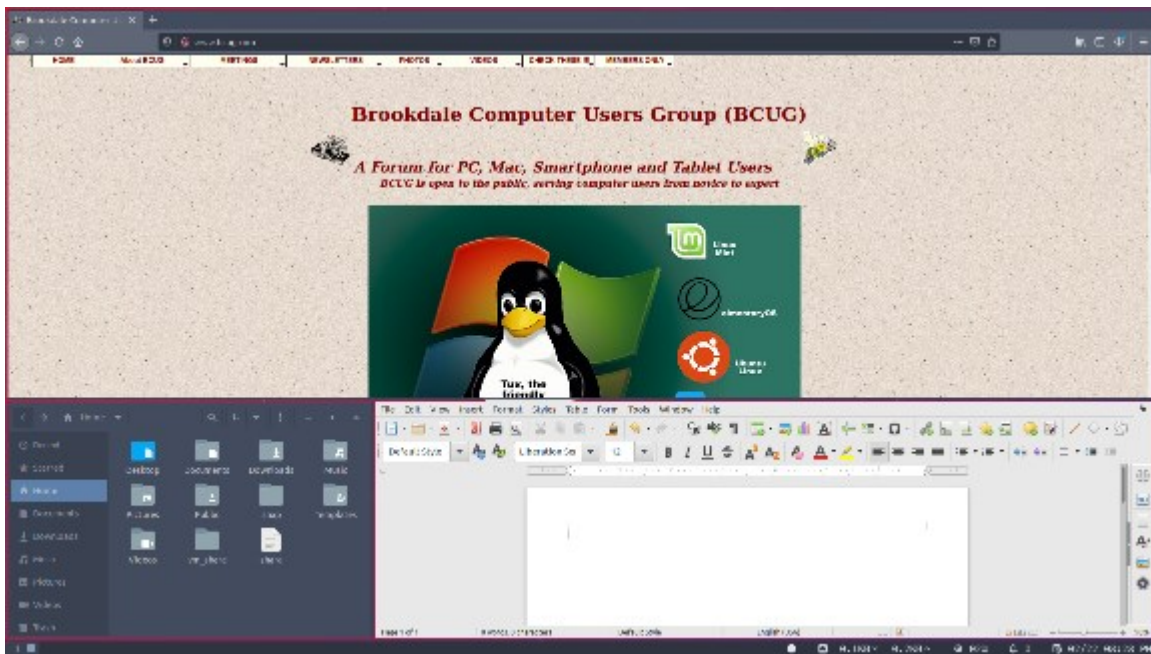


Figure 3. Three Applications Open.

Just as with a WIMP system, the layout is dynamic. In Figure 4, I've rearranged the tiles, with the terminal on the left, Firefox in the center, and the file manager on the right.

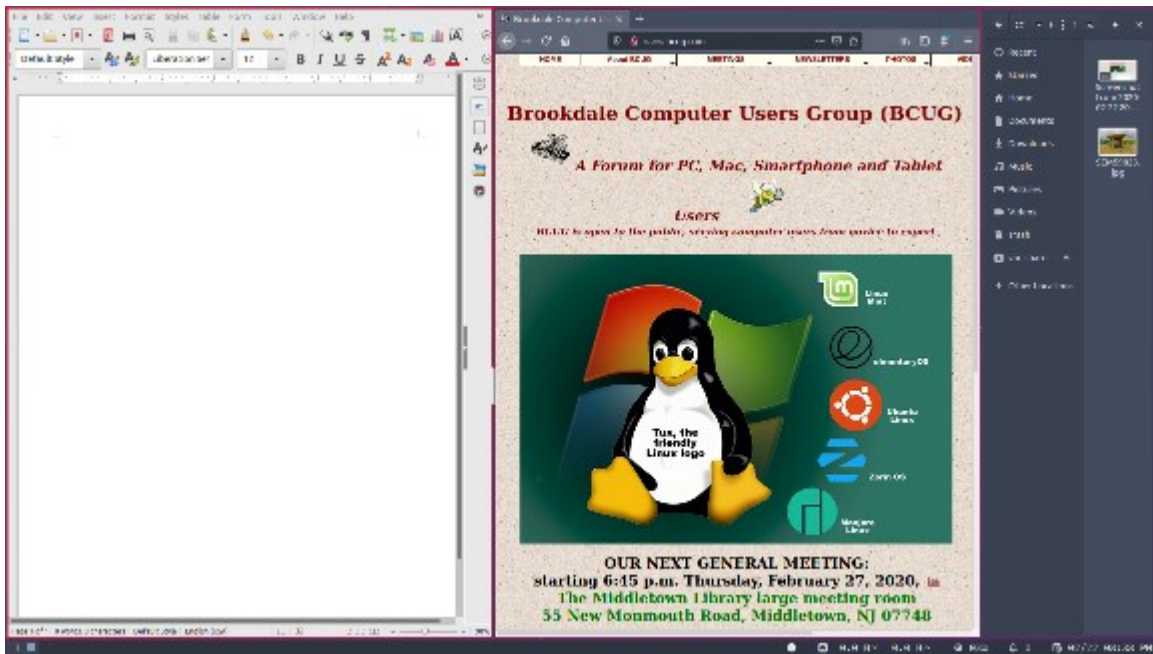


Figure 4. Rearranged Tiles.

In actual use, you will often need a more complex layout. Figure 5 shows one for managing a website. The large tiles at the upper left and right show the HTML code that generates a home page and the same page as a user would see it, respectively. Thus, as you make changes to the code, you can see their effect immediately. Between these two tiles are two smaller ones for file browsers, making it convenient to copy files on the PC. Although the tiles are smaller, they are large enough for the application. At the bottom is a tile with a terminal for command-line operations, which also can be small, as command-line commands are usually concise. The last tile is for GIMP, and is really just a placeholder, as the view would be toggled to full screen, as shown in Figure 6, to do graphics work.

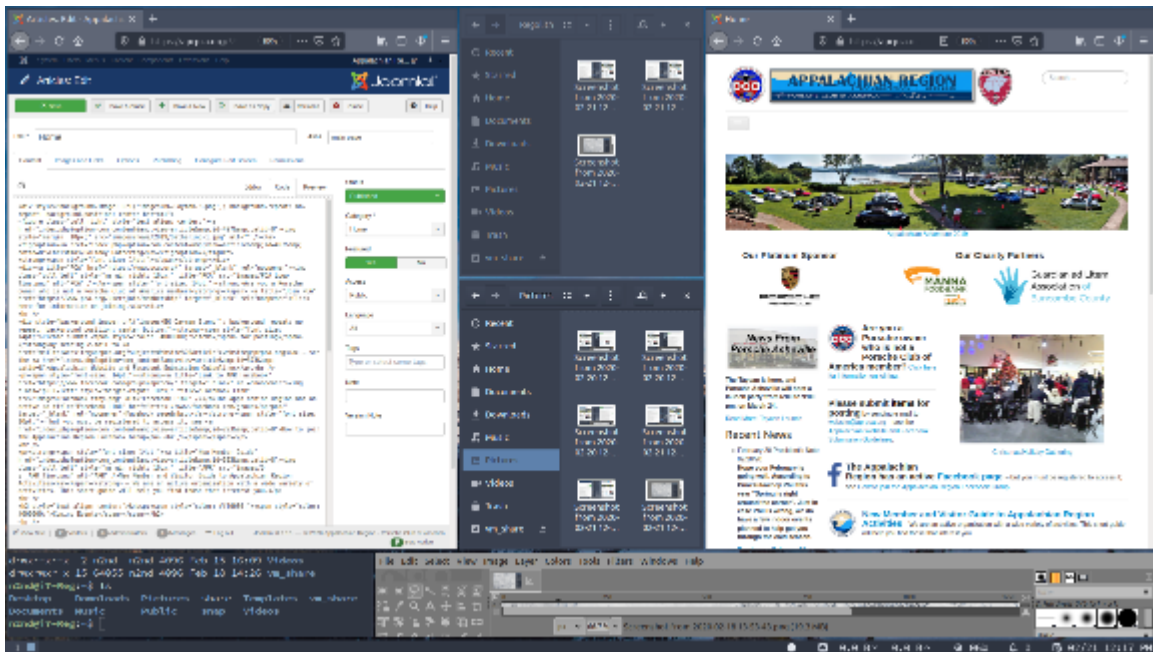


Figure 5. Website Managing Example with Six Tiles.

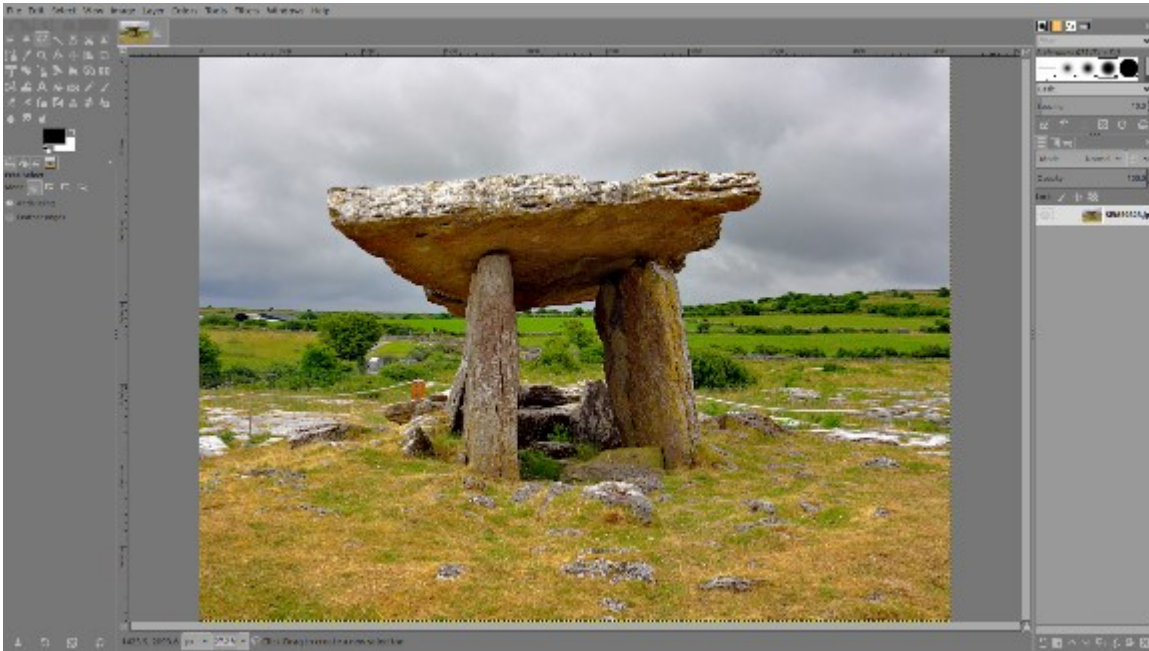


Figure 6. GIMP Expanded to Full-screen Mode.

Note that the desktop is never visible, as the tiles always entirely cover it. Also, as new tiles are always added by splitting an existing one, you do have to plan more than with a WIMP scheme. The latter is much more ad hoc since you can place windows wherever you like, without regard for other windows. Although you can confuse yourself if something vital is covered, which can't happen with tiling. Tiling is quite flexible once you become used to it, as you can resize and move tiles, and enlarge them to full screen if needed. What takes practice is that managing the tiles is done from the keyboard rather than with the mouse. At first, this is quite slow, as you have to refer constantly to the help screen, but after you learn the common commands, your hands leave the keyboard only when you have to use the mouse within an application. This brings the speed of the command line to a graphical environment.

Working in an application is the same whether you manage the interface using a WIMP or a tiled strategy; you use the keyboard and mouse identically. I do find that with tiles, I'm more likely to work in full-screen mode, as the size of my application window is likely to be small when tiled.

Tiling window managers are available for most operating systems, [https://en.wikipedia.org/wiki/Tiling\\_window\\_manager](https://en.wikipedia.org/wiki/Tiling_window_manager). However, because they are so different from the WIMP approach that most of us use, your early experiences are likely to be frustrating. A safe way to experiment is to install Regolith on a live memory stick or a virtual machine. (Ubuntu users can install Regolith as an alternate desktop; see their website.) Yes, it's Ubuntu Linux, but the main differences between Linux and Windows lie in their windows managers; and these disappear once you begin working on an application. Put another way, the differences between Regolith and Windows with a tiling user interface are quite small. Finally, if you are tempted to change your Microsoft windows manager to a tiling one, read the caveats in the above reference before you do, as there are significant issues.

While it's interesting to investigate tiling, few people are likely to use it. In the WIMP approach, most common operations are self-evident. If you see something, moving the cursor over it and clicking starts the operation. Typing <Win><arrow-key> to select a tile, or <Win><r> to begin resizing one is less obvious. But if you spend many hours each day on your PC and especially if you use the command line frequently, using a tiled interface could make you more efficient.

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## President's Corner

**Why Can't Standards be Standard?**

By Greg Skalka, President, Under the Computer Hood User Group

November 2020 issue, Drive Light — [www.uchug.org](http://www.uchug.org) — [president \(at\) uchug.org](mailto:president@uchug.org)

Part of what makes our technology work so well is that it follows standards. There are both rules established and items held up as an example in common use. All of our electronic means of communication are successful only because of standards. Without accepted rules for operation, cell phone calls wouldn't connect, and text messaging wouldn't work. Without established standards for interfaces like USB, Ethernet, Wi-Fi – even 120VAC power – we would not have the tech capabilities we enjoy today.

That does not mean that everything must be done in the same way. Innovation is often the result of new methods being introduced; if these prove beneficial and become popular, they can become the new "standard" for use. Sometimes multiple factions will solve the same problem or provide the same basic capability in different but incompatible ways. Remember the VHS vs. Betamax videotape war of the 1980s? Even though both followed standards, VHS eventually proved to be more popular and became the usage standard, forcing Sony to abandon the production of Betamax. These battles to become the popular standard can improve the technology available, but they also cause grief for the user that found their adopted version became the loser.



Unfortunately, while some tech changes have merit, others appear to be changed for the sake of change. Some changes to long-held ways of doing things seem to be for the benefit of tech companies (and their ability to market and sell new products), rather than tech users. User interfaces are especially susceptible to the change for marketing's sake syndrome. I am so tired of Microsoft Office changing their user interfaces while providing little substantive or beneficial change.

Sometimes it is the competition that forces there to be differences. Manufacturers need differentiating factors and features to be able to gain market share over something other than price. Companies will often litigate with competitors that "copy" their key attributes. This usually forces multiple standards on the marketplace, as with Microsoft's Windows and Apple's MAC, or Apple's iPhone and Android phones. This can also result in different interchange formats between competing device families. Fortunately, in most cases, the basic governing standards within product types are still followed by all competing vendors. You may not be able to use Facetime on an Android phone, but at least it can call and text with an iPhone. It is bad enough that few accessories are interchangeable between Apple and Windows computers; imagine if you couldn't send an email between them?

The interchange of files between tech camps can be a tricky problem. Fortunately, there are some formats, like PDF (Portable Document Format) that are universally supported and recognized on all platforms, be they computers, tablets, or smartphones. Most Microsoft Office files are at least viewable on most platforms. Many image and video file formats are easily interchangeable, but unfortunately, there are quite a few that are not.



My wife and I recently went on a one-week driving vacation to a cabin in Idaho. Though we were kind of isolated from technology (off the power grid with solar/battery and no cell coverage), we brought along a lot of our tech devices. These included five image/video-capturing devices: a camera and smartphone each, plus my action cam. When we returned, I collected all the photo and video files on one USB Flash drive and sorted them chronologically. This was a bit of a task, as it amounted to 23GB of data in over 2000 files. The fact that there were different file formats and different hardware platforms involved didn't help.

Being on vacation, my wife and I both took a lot of photos, but I took the majority – over 90% of them. She has fancier equipment but takes fewer shots, often looking mostly at artistry and composition. I have more modest equipment, and I've always taken lots of photos. I am concerned about good composition, but also tend to think of my photography as an augmentation of my memory. I take a lot of photos and videos of trips and family events simply to help me remember them.

My photos and videos were pretty easy to compile and view. I have Panasonic Lumix “bridge” camera; this type of camera has the large body and lens of a DSLR (Digital Single-Lens Reflex) but with the smaller sensor (and lower price) of a point and shoot camera (it is a bridge between the point and shoot and DSLR). It also has a fixed (non-removable) lens like a point and shoot camera. My camera takes JPEG (Joint Photographic Experts Group) photos (.JPG file extension), which is a lossy file compression format and is probably the most popular photo image format. It takes MPEG-4 (Moving Picture Expert Group-4) videos (.MP4 file extension), which is probably the most widely-used video compression format. My Samsung Android smartphone takes photos and videos in these same formats. My small off-brand action camera also takes MP4 videos. All in all, they are pretty standard and universally compatible.



My wife has the fancy (or at least more expensive) hardware – a Canon premium DSLR and an iPhone. She has the Canon set to save photos as both JPG and raw (.CR2 file extension). The raw file format consists of the unprocessed or minimally-processed camera sensor data (“raw” data) and is a much larger file. It is the highest quality format and is the best to use if photo editing will be done. I copied only her JPG files from our trip, as that’s all I wanted. Though I didn’t use them, I was impressed that the Windows 10 photo viewer (Microsoft Photos) could view them. CR2 files she had taken, as I’d never been able to see them on my Windows 7 laptop.

The iPhone proved to be the biggest challenge and the most incompatible with my computing infrastructure. My first difficulty was in getting the photo and video files off of the iPhone and onto my Win10 computer. You can’t just connect the two devices, and I would not know how to find the files I wanted on the iPhone if I could. Fortunately, I already had a solution to this problem. A few years ago I’d purchased a SanDisk iXpand 32GB Flash drive, which can act as an intermediary between the Apple and Windows worlds. This is a special Flash drive with both a USB type A connector and an Apple Lightning connector. It also contains an internal battery; this may be necessary because, unlike USB, Lightning peripheral devices can only provide power, and not receive it. Through the SanDisk app downloaded from the Apple Store, photo and video files can be located on the phone and then copied to the Flash drive from the iPhone, through the Lightning connector. The Flash drive can then be plugged into a Windows PC through the USB interface so that the files from the iPhone can be accessed and copied.

Even with the iPhone files on my Win10 computer, the compatibility battle was not over. The iPhone video files are .MOV (Apple QuickTime) compressed video files, which are compatible with Windows. The photo files, however, are .HEIC extensions, not immediately recognized by Windows. These are High-Efficiency Image Format files, a new MPEG format that Apple has adopted. Microsoft did provide an ac solution, however. Double-clicking on one of these files on my Win10 PC brought up a message to download an app from the Microsoft Store. Once I had downloaded and installed the HEVC Video Extensions app (\$0.99), my computer could view these photos.

In addition to this new file format, new iPhones also take photos in a mode called “Live Photo”. In addition to the .HEIC image, the phone also captures a video running 1.5 seconds before and after the image, so each photo was taken results in two files. Since now I could see both, I decided to keep both.

After a bit of manipulation, I finally had all of the trip photos and videos I wanted in one place, all visible in Windows. Though Apple may keep changing up their file formats, it appears Microsoft is providing ways to keep up and view their files in Windows 10.

Now if only my Chromebook could open all these files. I've had poor luck with video files on my Samsung Chromebook, and none of the ones we took on the trip could be opened. It turned out the only thing it could see was the JPG files. It seems the Google Chrome OS needs to update its standards.

***The Most Photographed Spot*** – I've been ordering a lot from Amazon since the pandemic, and a lot of the time the email I get from Amazon asking how my package delivery was, includes a link to a photo of the delivered package sitting on my doorstep. Apparently, the delivery person now takes a "proof of delivery" photo. This may soon make my doorstep the most photographed location on my property.



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## Hyperlinks Are Cool

By Jim Cerny, Help Desk Host, The Saratoga Users Group  
September 2020 STUG Monitor — [www.thestug.org](http://www.thestug.org) — [jimcerny123 \(at\) gmail.com](mailto:jimcerny123@gmail.com)

One of the really fun and easy things technology has brought us is hyperlinks. You probably use them all the time and don't even realize how cool they really are. Click on a hyperlink and PRESTO you are instantly somewhere else – tele-transported like Star Trek to another planet.

You may know hyperlinks by other names such as "hotlinks", "hypertext", or simply as a "link". Most often a hyperlink text is in [blue](#) and underlined, but not always. Let's see how they work when we are using our web browser (Firefox, Microsoft Edge, Safari, or whatever internet browser you use) to explore the internet. On almost every web page you will see some words underlined and in blue – if you click on them with your mouse (or touch them on a touchscreen) you will go to another web page. (The web page address will change in the address bar at the top of your web browser window). This is real magic. The people who have created that first web page put in a hyperlink that will take you someplace else. On your web browser, if you click on the backward arrow at the top you will return to the previous web page where you started. As you explore the web you are creating a "chain" of web pages you have viewed in this session one web-page link after another. You can go backward or forwards along this chain by clicking the left or right arrows at the top.

Here are some helpful things about hyperlinks:

A hyperlink can be text, an icon, or a photo. It can be indicated as a link by a different color (such as blue), underline, highlight, or by nothing at all. If you "hover" your mouse over a hyperlink without clicking on it, it may change color or be highlighted, and your mouse pointer may change to a hand.

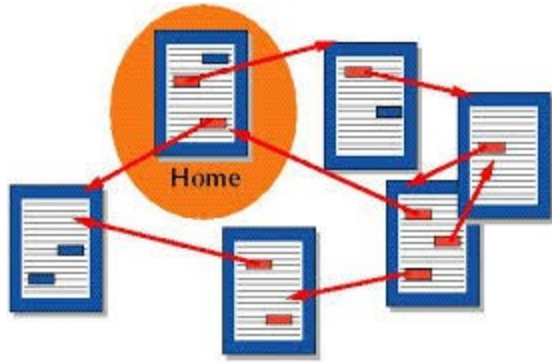
Hyperlinks are used to instantly take you to another web page but they also have many other uses. They can, for example, take you to a different place on the same web page, document, or spreadsheet. Or they may just open a small box or window on your screen, such as when using menus. It is up to the person who created the web page to put in any hyperlinks and to determine what happens when you click on them. Almost anything is possible.

Sometimes clicking on a hyperlink will create a new "tab" on your web browser and keep your previous web page on a previous "tab." Each "tab" may have its own chain of web pages you have visited.

Yes, you can create your own "hyperlinks" in your documents or spreadsheets. Ask Google how to do this and watch some good videos on how to do it. It is not difficult. It is, basically, assigning a web page address to a word or photo in your document.

If a web page (or any file such as a document or spreadsheet) contains hyperlinks and you COPY it, the hyperlinks will go with it. Sometimes you may get a text box asking if you want the active hyperlinks to be there or to copy "just the text" without any links associated with them.

But most of the time we don't care how hyperlinks work or who put them in there – we just explore all we want by just clicking on whatever strikes our fancy. Think of a hyperlink as a free ticket to someplace else! Enjoy your surfin' safari, dude!



## What is a Hyperlink?

A link from an image, button, or hypertext to another part of the same web page or another web page

**HYPERLINK** Click on 'Kittens' and it takes you to another page with an image of kittens.

Kittens are not toys. They have needs and feelings. Do not give them as presents.

One web page      Another web page

**'Link' or 'Hotlink' mean the same as 'Hyperlink'**



## Interesting Internet Finds August 2020

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In the course of going through the more than 300 RSS feeds, I often run across things that I think might be of interest to other user group members.

The following are some items I found interesting during the month of July 2020.

*Why Video Calls Are So Exhausting (And What You Can Do About It)*

<https://www.besttechie.com/why-video-calls-are-so-exhausting-and-what-you-can-do-about-it/>

Attending a lot of video conferences and now exhausted? Check out this post for some ideas on how to cope with that.

*How To Enter BIOS In Windows 10*

<https://www.digitalcitizen.life/how-boot-uefi-bios-windows-tablets-convertibles>

You may never need to know this but if you ever need to access, or change, settings of the BIOS of your Windows 10 device, it is good to know.

*3 Different Kindle Homescreens – Which Is Your Favorite?*

<https://blog.the-ebook-reader.com/2020/07/09/3-different-kindle-homescreens-which-is-your-favorite/>

I have been a Kindle user for a long time and did not know this. If you have a newer Kindle, and dislike the default homescreen check out this post for other options.

*How To Get In-Ear Headphones To Fit Properly*

<https://www.techlicious.com/how-to/tips-for-getting-in-ear-headphones-to-fit-properly/>

I go through a lot of in-ear headphones, for some reason, so this is something I deal with frequently. If you have problems getting the earpieces to fit properly, check out this post for some possible solutions.

*11 Handy Zoom Hacks To Make Your Digital Life Easier*

<https://www.mentalfloss.com/article/626634/zoom-meeting-hacks>

If you are like me, you are attending more zoom meetings these days. Check out this post to make things easier for yourself. There were some of these hacks I didn't know about before reading this post.

*What Is SupportAssist and Should I Let It Run?*

<https://askleo.com/what-is-supportassist-and-should-i-let-it-run/>

If you have a brand name PC that is still under warranty and has this type of application installed, you should read this post. (Note: I have an HP desktop, and follow Leo's advice to keep things going while under warranty.)

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