

Bits of Bytes

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

Volume XLI

January 2021

Issue 1



The Prez Sez

by John Pearce, President, P*PCompAS

We completed elections for 2021 at the December meeting despite the conflict we had with our group and one other trying to use the APCUG Zoom account at the same time. I will be diligent in checking for this situation as we go through the year. The two proposed changes for the Standing Rules were adopted and the revised document is on our web site: <https://ppcompas.apcug.org/>.

Dues for 2021 have been waived. This is a good time to convince your friends to join our group because they get their 2021 membership for free!

I have heard from a few members that we need to up our game with monthly meeting presentations. I have asked Cary, our V.P. and program chairperson, to look at the APCUG Speakers Bureau for presentations that are preferably live (not recorded) and are a good fit for P*PCompAS. Greg Lenihan provided information on Sarasota Technology User Group's (STUG) Circle of Learning that may be appropriate for our group.

I am very happy to report Ann Titus will continue with Membership and Paul Godfrey will remain our Librarian. Preparing for the day, if ever, we resume meeting in person, David George continues as Barista, and AJ Whelan handles Audio. We need a volunteer for Hospitality and one for Nominations.

Next P*PCompAS meeting: Saturday, 2 January 2021

Judy Taylour from the APCUG will give a presentation on "Ideas for Revitalizing Your Computer Club."

Even though 2020 is mostly history, and even though vaccinations for COVID-19 have started, now is the time to reinforce our social distancing (6 ft apart), wearing a mask, washing hands, and using hand sanitizer when you can't wash with soap and water.

Borrowing words from a friend, may we return to a world where we can hug our friends and loved ones without the fear of getting sick. ☺



Meeting Minutes

by Greg Lenihan,
P*PCompAS
Secretary

President John Pearce started the 5 December 2020 membership meeting at 9 am via Zoom. We soon had conflicts with another APCUG group trying to use the account, and members were being kicked off the platform. We were able to hurry through the business portion. The minutes of the November meeting were approved.

OFFICER REPORTS

Vice-President Cary Quinn plans a short video presentation for today and is working on ideas for future presentations.

Treasurer Chuck Harris was not present, but e-mailed the club balances. We have \$3224.95 in savings and \$71.29 in checking.

Membership Chair Ann Titus had nothing to report.

Newsletter Editor Greg Lenihan

announced the next deadline as 19 December.

Librarian Paul Godfrey was not present.

Hospitality Chair Ilene Steinkruger had nothing to report.

APCUG Rep Joe Nuvolini was not present, but it was announced he would be out of the hospital this day.

Board of Directors Chair Peter Rallis had nothing to report.

OLD BUSINESS: None

NEW BUSINESS:

There were no nominations from the floor, so the slate of officers for next year were voted in. They are: President: John Pearce, Vice-President: Cary Quinn, Secretary: Greg Lenihan, and Treasurer: Chuck Harris. New BOD member will be AJ Whelan. There were no additional nominations from members.

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Librarian: Paul Godfrey

Membership: Ann Titus

Committees

Audio: A.J. Whelen

Hospitality: Ilene Steinkruger

Programs: Cary Quinn

Publicity: Cary Quinn

Nominating: Vacant

Board of Directors

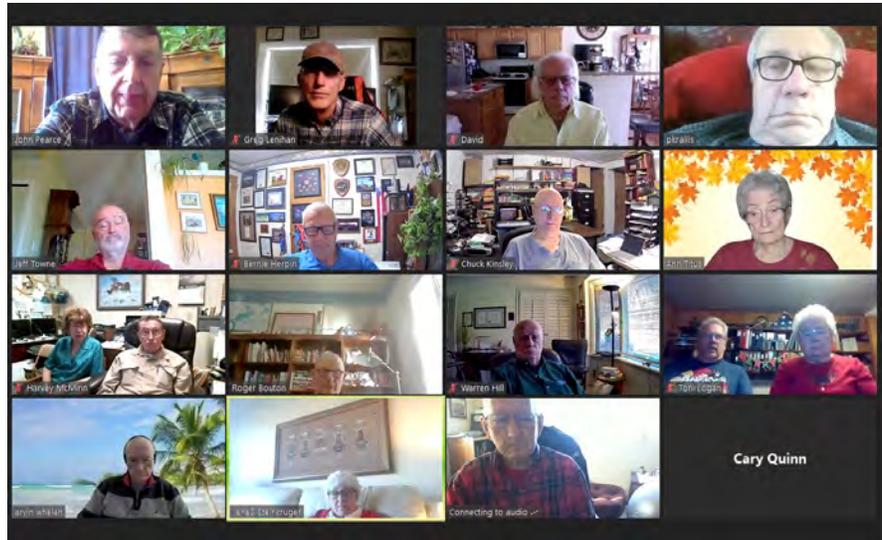
Peter Rallis

Paul Godfrey

Ann Titus

Harvey McMinn

Jeff Towne



Zoom screenshot of the 5 December 2020 membership meeting



Zoom screenshot of the digerati attending the 19 December breakfast meeting.



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What is RAM? Everything You Need to Know

Ian Paul, reprinted with permission from [HowToGeek.com](https://www.howtogeek.com)

Original article at: <https://www.howtogeek.com/697659/what-is-ram-everything-you-need-to-know/>



People often draw parallels between computers and the human brain, and sometimes, it's an apt comparison. For example, both the brain and a computer have short- and long-term memory. RAM is where a computer stores its short-term memory.

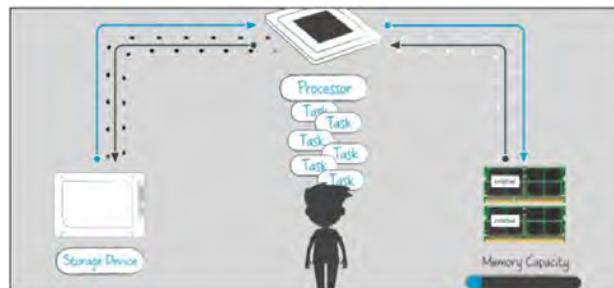
What Is RAM?

RAM stands for Random Access Memory, and if you've ever opened a lap- or desktop computer, you've seen it. In the image above, you see modern RAM sticks for desktop PCs. They have a sleek casing that functions as a heat spreader. However, unless you're a high-powered overclocker, this is mostly about looks (and making them easier to install.)

Laptops, meanwhile, often have more basic RAM sticks, as space concerns are paramount. Plus, unlike modern PC cases with transparent sides, people rarely see the inside of a laptop. However, you *can* get laptop RAM (especially for gaming models) with heat spreaders.

What RAM Does

So now, we know that those sticks in your PC's motherboard are system RAM, and they function as short-term memory, but what does that all mean in practice? Well, when you carry out actions on your computer, like opening a text document, it requires



access to the data contained in that file. When you're not working on that document or you click save, the latest copy of that file is saved to the hard drive in long-term storage.

When you're working on the file, however, the most recent data is stored in RAM for quicker access. This is true for spreadsheets, text documents, web pages, and streaming video.

It's not just document data, either. RAM can also store program and OS files to keep apps and your computer humming along. RAM isn't the sole source of short-term memory, though. For example, a graphics card has its own graphics RAM and the processor has smaller data caches.

Nevertheless, RAM is the key location for data that are actively being used by the system.

How RAM Works



Continued on page 4

Meeting Minutes (Cont. from page 1)

There were changes that passed to standing rules that dues will be waived next year and a change to delete a reference to the term "Web Board."

John Pearce mentioned that the APCUG Speaker's Bureau seemed to have a lot of good presentations.

ANNOUNCEMENTS

The next social breakfast Zoom meeting will be 19 December at 9 am via Zoom.

Our next membership meeting is on 2 January.

PRESENTATION

Due to conflicts with the APCUG Zoom account, we switched to John Pearce's private account and were limited to 40 minutes. Cary Quinn showed a video from TechGumbo titled "Windows 10 Tips & Tricks That Will Save You Time! 2020." Afterwards, Cary sent out an e-mail to members with more video links. ☺

RAM (Continued from page 3)

RAM is made up of tiny capacitors and transistors capable of holding an electric charge that represents bits of data, similar to processors and other parts of your computer. This electrical charge needs to be constantly refreshed. If it's not, the capacitors lose their charge very quickly and the data disappears from RAM.

The fact that data can be lost so quickly when the charge is gone is why saving any changed data to the hard drive or SSD is so important. It's also why so many programs have autosave features or cache unsaved changes in the case of an unexpected shutdown.

Forensic specialists can retrieve data from RAM under special circumstances. However, most of the time, once you're done with a file or your computer shuts down, the information in RAM is gone.

What Is DDR?

The most common form of RAM currently used is DDR4. It's the fourth version of Double Data Rate Synchronous Dynamic Random-Access Memory (DDR SDRAM). "Double data rate" means data can be transferred twice per clock cycle, as opposed to just once. Effectively, it means you double the memory bandwidth, and also refers to how quickly data can be moved into and out of RAM.

Prior to DDR4, computers were using (surprise, surprise!) DDR3. It's not uncommon for computers to still be rocking DDR3 RAM. DDR4 came out in late 2014, and it didn't become the most common type of RAM until a few years later.

RAM sticks are "keyed" to prevent people from mixing and matching different generations of it that are incompatible. If you look at the RAM stick shown above, for example, you'll see a small divot in the bottom row. On DDR4, that divot is in a different place, so that (along with other differences) makes it impossible to put a DDR3 stick into a DDR4 slot.

RAM also comes in two types: DIMM and SODIMM. DIMM is used in desktop tower PCs and servers, while SODIMM is used in smaller devices, like laptops and compact desktops. Some premade computers (especially laptops) also have RAM modules directly soldered to the motherboard. When

this is the case, there are no RAM sticks, which makes upgrading impractical.

Speeds, Voltages, and Capacities

While the basics of what RAM does are very simple, there are vastly different types, even among DDR4. For example, RAM functions at varying speeds, such as 2,400, 3,000, or 3,200 MHz. It also comes in different sizes, like 4, 8, or 16 GB.

Generally, modern computers need two RAM sticks (called a kit) of the same size to run in what's called "dual-channel mode." Basically, this just means a PC is running on two sticks of RAM.

Many people claim you can mix and match different RAM configurations, and that's mostly true. However, it's much easier to maintain a PC if its RAM is the same speed and capacity, and comes from the same manufacturer, in that order of importance.

Getting RAM of the same voltage is also a concern, but a lot of desktop DDR4 is sold at a stock 1.35 volts, making this less of an issue. Laptops and earlier generations of RAM, however, are a different story.

If you can't get the same make of RAM for a laptop, at least make sure you use the same voltage, speed, and capacity. How much RAM you can use also depends on what your motherboard can take. An aging laptop, for example, might only be able to handle up to an 8 GB DDR3.

A modern desktop PC, though, might be able to take something like a 128 GB DDR4, depending on its processor and motherboard. For most people, though, 8 to 16 GB is plenty.

There's a lot more to RAM than this basic overview. If [you're overclocking](#), then voltages and [timings](#) become important. If not, though, you hopefully now have a better understanding of what RAM does, and why it's such an important component of your PC.

RELATED: [How to Overclock Your Computer's RAM](#) 😊

Searching Backwards: Reverse Directory Lookups

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

Can you locate a person or business if all you know about them is a phone number or street address? What if all you have is an email address or a photo? This type of search is called a reverse directory lookup. Learn about the free and fee-based reverse search tools you can find online...

How to Do Reverse Directory Lookups

Usually, you know someone's name and you want their contact information, but in some cases it's just the opposite -- you have contact information and need a name. Maybe you found a scrap of paper with a phone number on it, and can't remember who it was for. Or you may have someone's street address or email, but no name to connect to that info. In some cases a reverse lookup is easy and free, but sometimes it will cost you money.

I always like to start with free, so try a search engine search first. A Web page containing a phone number, email address, or street address may bear the owner's name as well. Put the search string in quotes to avoid results with parts of the string scattered all over the page, i.e., "914-555-1234" or "123 Main St Anytown CA" with the quotes. If you don't get any useful results, try it without the quotes.

If you're searching for the name associated with an email address, you can enter an email address in [Facebook's search box](#). With over a billion million members, you have a good chance of getting lucky. But this only works if the person you're looking for has their email address listed as public on their profile. That's Them's [Reverse Email Lookup](#) is free and offers to find people using an email address. Feed it an email address, and it will return an associated name, phone number, and physical address. I tried it and found that sometimes it's deadly accurate, and sometimes it's dead wrong. You might find it useful, but I would recommend that you verify the results.

The [White Pages Reverse Phone directory](#) will give you the name of the person associated with a landline phone. Cell phone lookups are difficult, because the mobile phone providers do not make this information public. If you have a street address, try the [White Pages Reverse Address Lookup](#). It can tell you the names of people or

businesses associated with an address. But more often than not lately, I've found that WhitePages will return a search result with a link to their paid Premium service. (Whitepages.com owns 411.com and Switchboard.com, so don't bother going there if you've already tried Whitepages.)

[Fast People Search](#) is a service I have been using more often, use when other people search tools come up empty or ask for money. It can do lookups by name, phone, or street address. The site says it includes "landline, cell phone, business and residential phone numbers, as well as information for addresses and people all across the U.S." I've found it very useful, with the understanding that some of the information it returns may be incorrect or outdated.

MelissaData is a company that specializes in address verification software and services. Although their primary market is direct mailers who use the U.S. Postal service, you can use their [Address Verify Lookup page](#) to learn some interesting tidbits about a given address. Plug in a street address, and it will tell you whether it's residential or business, the associated owner, telephone number, email address, congressional district, and school district. If you're a paid subscriber, you can also get the property owner's name, the assessed value, square footage, and data concerning the mortgage and real estate taxes. [MelissaData's address search](#) will show you all the addresses on a street, but does not include the names. If you know of a tool to provide all the names and addresses on a street, please post in the comments.

Cell phone lookups are difficult, because the mobile phone providers do not make this information public. But here's a sneaky method that sometimes works. To find the owner of a cell (or landline) phone, try [Spy Dialer](#). It calls the number you enter, but it doesn't let the owner know you called. It then records their voice mail message and plays it back for you. If the person has an outgoing message like "Hi this is Joe Sixpack, I can't take your call right now..." then it's likely you've found the owner. Finding the location of a mobile number's owner is more difficult, due to number portability and other factors.

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Where's the Clipboard?—Still a Good Question

By Phil Sorrentino, Sun City Center Computer Club, Florida, www.sccccomputerclub.org, [Philsorr \(at\) yahoo.com](mailto:Philsorr(at)yahoo.com)



The clipboard has been an integral part of Windows for as long as Windows has been around. And the question of its location has been around almost equally as long. (It was probably the first thought after we realized that the clipboard existed.)

We, the users, really don't have to know where the clipboard is located to use it, though I bet some very technical individuals could give you a pretty good dissertation on its location. We just need to know how to use it to our benefit. Well, we still don't know where the clipboard is, but we now can put more than one item onto it. As of the Windows 1809 build (the current version is 2004), Windows supports a clipboard that will hold more than one item, but more on that in a few minutes.

Even without knowing the location of the clipboard, we can still discuss how it works and how we can use it to our advantage. The clipboard is a buffer (an area in memory that is used to temporarily hold data while it is being moved from one place to another within a computer) that the operating system provides for short-term storage and transfer within and between application programs. Its contents reside in the computer's RAM (random access memory). And remember, RAM is "volatile" memory so when the power is

turned off, the RAM contents are lost. (By the way, a cache, which is similarly a storage area in memory, is slightly different; it is an area in memory that is used to decrease the access time of data that is repeatedly accessed.)



Cut



Copy



Paste

Cut, Copy, & Paste is part of the Windows Operating System but these commands also function in many software applications, because Windows provides an API (Applications Programming Interface) by which applications can specify Cut, Copy, & Paste operations, which can be executed by key commands or menu operations. Fortunately, most professional software adheres to the now-standard key controls, Ctrl-X for Cut, Ctrl-C

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Searching Backwards (Cont. from page 5)

[Google Reverse Image Search](#) and [Tineye](#) use search-engine and image recognition technologies to locate online images similar to the one you provide. Both can (sometimes) find web pages that bear the image of a person you are seeking. It's an imperfect technology, but the service is free.

Are Paid Reverse Search Tools Reliable?

Reverse cell phone number searches are offered by many sites, but in my experience, they are either unreliable or require a lookup fee. Typically, a site will search for a phone number and tell you if it found a matching name. Then you're asked to pay \$5 to \$25

to get the name. See my related article [Reverse Mobile Phone Number Lookup](#) for more info on mobile phone lookups. Reverse email searches work much like reverse phone number searches. But again, always try Googling the number or address first.

Is it worth paying the fee? That's a gamble. I looked up a street address at which I have not lived for over 20 years at Spokeo.com - and yet there I was, it said. [BeenVerified](#) is another site that offers to help you "Search People & Public Records." They promise to "cross-check billions of data points and dozens of data sources" but you have to endure screen after screen of fake progress bars and spinning circles, before they hit you with the news that in

order to see your search report, it requires a membership costing \$26.89/month. So you may very well pay for outdated, worthless information, or get suckered into a monthly subscription you didn't want. Read all of the fine print to see if there is a money-back guarantee should your search prove unfruitful.

Some reverse directory search sites require you to register your name, address, phone number, and/or email address to get the information you want about another party. This is one way such directories strive to expand and keep their records up to date. Of course, you don't have to give accurate information; but neither does the person you're seeking! ☹️

Where is the Clipboard (Cont. from page 6)

for Copy, and Ctrl-V for Paste. Hold down the Control key and simply tap the appropriate key for the corresponding action. (At this point in the development of software applications, I think any deviation from those definitions would be catastrophic, or at least foolish.)

That's the "what it is;" now for a short review of how to use it. Some technical references may call the clipboard a "paste buffer" because we typically put items into the clipboard for eventual use when we "paste" the item into its final destination. Paste is the final action, as in "Cut & Paste," or "Copy and Paste." The Cut or Copy action puts an item into the clipboard (or Paste buffer), and the Paste action copies the item to its desired location. (Remember, Cut deletes the item you have selected, Copy does not.) The Paste action does not empty the clipboard, it only copies the contents, so you can paste the same clipboard contents over and over again until a new item is placed into the clipboard with a Cut or Copy. If the clipboard can only contain one item, then when the second item is put onto it, the first item is lost. It can be very frustrating if the item in the clipboard is a list of many items, and then another item is placed in the clipboard before the original collection had been pasted into all the places where it was needed.

Now if you've noticed, I use the term "item" to describe what is put onto the clipboard. The item can be anything that is currently selected, so it can be a single character like "A," or a highlighted sentence, or a highlighted paragraph, or a picture, or a collection of pictures, or a document, or a collection of pictures and documents, or a folder, or a collection of folders, or even a collection of folders and pictures and documents. All of these

items will go onto the clipboard when a Cut or Copy action is performed. The type or size is not important, anything selected goes onto the clipboard. So, here's a quick review if you want to select many items to be Cut or Copied and finally Pasted. If the items are contiguous (items #3, #4, #5. and #6) in a list, select the first one, then hold down the Shift key and select the last item ... all items in between will be selected. Then treat any item selected as if it were alone and all selected items will follow. If you want items in a list that are not contiguous (items #3, #5, and #8), select the first item, then hold down the Ctrl key and select all of the other items. Then treat any item selected as if it were alone and all selected items will follow.

As indicated way back in the first paragraph, the current Windows 10 Clipboard can hold more than one item, although as installed, the clipboard defaults to only one item. To take advantage of this feature, go to Settings-System-Clipboard and turn on "Clipboard History." This will allow multiple items to be placed on the clipboard and allow you to access these items by a simple "Windows key & V-key" combination. Pressing this key combination displays the Clipboard History in a window. With the Clipboard History window shown, you can choose and paste any item in the list. Another feature of the new clipboard is "Sync across devices," which allows you to "Paste text on your other devices when you sign in with a Microsoft account or work account," probably a useful feature in a work environment. Also provided here is "Clear Clipboard data" for those who like to keep a neat clipboard. So finally, we can put more than one item on the clipboard (without third party software), but sometimes I still wonder where the clipboard is. ☺

Tip: Change your display refresh rate

The refresh rate of your monitor determines how smooth motion appears on screen. This is especially important when playing graphically-intensive video games, but you'll also notice it when you're dragging open windows around.

Determined by the manufacturer and model, monitors can have different refresh rates. In general, a 60 Hz monitor can

display images at 60 frames per second.

If your graphics are lagging, check that your screen is at its maximum refresh rate:

- Click the **Start button** in the lower left-hand corner, then select **Settings** (the gear icon).
- Click on **System**, then **Display**. This should open automatically or choose it from the left menu.

- Scroll down to the second-to-last option, **Advanced display settings**.
- If you use dual monitors, select from the drop-down which monitor you want to change.
- In the Refresh rate drop-down menu, you'll see a few refresh rate options supported by your monitor.
- Just click on the desired refresh rate and close the window. ☺

What Do I Do About Adobe Flash End of Life in 2020?

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



Support for Adobe Flash will end at the end of 2020. The good news is that most sites have stopped needing it. For those that do, there's really no alternative.

Adobe Flash player is going away at the end of 2020.

Most major browsers will stop supporting it, and websites that rely on it will stop working.

What can you do? Nothing.

But then, you shouldn't have to.

Adobe Flash is old, unsupported, and has security issues that will never be fixed. It's also been replaced by the HTML 5 standard. Websites and online games that rely on Flash will stop working when browser support is finally, completely removed. Website owners fix this by rewriting their sites to use HTML 5 or other alternatives. Website visitors have no real alternative or options.

Adobe Flash

[Adobe Flash](#) is a combination programming language and support environment originally written to make websites, webpages, and some classes of applications more interactive and graphical. The most common use has been to write games you can play online, though there are many other applications. YouTube, for example, originally used Flash to support playing videos online.

Adobe, the company that wrote and owns Flash, has [announced an official end of life](#) of December 31, 2020. Downloads of the Flash player, as well as (presumably) any other Flash-related tools, will be removed from the Adobe websites.

Most major web browsers will completely remove support for Flash on or before that date. Apple's Safari browser has already done so.

Websites still relying on Flash after that will break.

Flash Replacement: HTML5

[HTML](#) is the language used to create webpages such as this one. Version 5 of the HTML specification, or simply HTML5, added a wide array of support intended to solve many of the problems Flash tried to solve, but uses open standard rather than proprietary technology.

Web browsers have supported HTML5 for several years. It's extremely likely the browser you're using to read this page online has complete HTML5 support.

The bottom line is that HTML5 should be able to replace almost all use of Adobe Flash.

The problem, however, is that HTML5 is not compatible with Adobe Flash. Webpages or applications like games currently relying on Adobe Flash will need to be rewritten in order to keep working.

What to do about Adobe Flash end of life

You and I do nothing. There is nothing we *can* do. Flash is proprietary technology from Adobe.

There's nothing to install, nothing to turn on or off, and nothing to replace it with. When it dies, it dies.

The good news is that you should have nothing to do anyway. The impending end of Flash has been known for *years*. The vast majority of the sites that used to use it — like YouTube — stopped using it long ago.

It really should be a non-event; much ado about nothing.

But will it be?

But what if...

What if you encounter a site that still requires Flash after Flash is no longer available?

There's little you can do. Your options really do boil down to:

- Stop using that website or application.
- Stop using that website or application and complain to the website owner.

It really is on website and application owners to update their content so it no longer relies on Adobe Flash. ☺

New Law Could Save You Money on Your Cable and Internet Bills

by Charlie Fripp at Komando.com (article from 12/22/20)

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Cable bills have been rising to out-of-control prices for a few years now. That's what sparked the cut the cord phenomenon in the first place. It's not just the plan you chose making it so expensive, either.

Tons of hidden fees are constantly being added. [Tap or click here to see some of the fees you didn't know you've been paying for.](#)

Now, Congress has given the American people the freedom of transparent internet fees. The Television Viewer Protection Act (TVPA), which was first introduced a year ago, has finally become law. It into effect this week after Congress granted the FCC a hold on enforcement for six months. Here's what it means for you.

What the new law means

One great thing to come from the new law is you will no longer be charged a rental fee for broadband equipment that you own. If you use your own modem or router to connect to the internet, your Internet Service Provider (ISP) can't charge you a "rental" fee.

Before the law was approved, the biggest opponent thereof was Frontier Communications. The company notoriously charged customers \$10 for a device that they outright owned.

At the time, Frontier claimed the rental fees were to cover the higher support costs of owned devices. But in the same breath said that it couldn't repair any self-owned devices. The company has changed its tune and says it is now compliant with the TVPA.

"Customers that are charged for covered equipment may return equipment and will not have equipment charges. If a customer uses their own equipment, they may face compatibility issues with their service depending on the equipment, and Frontier may not be able to provide technical support," Frontier said.

No more hidden internet fees

What the TVPA also curtails are hidden fees that customers might not be aware of when they sign up.

Under the new regulations, it will compel providers to inform customers about exact charges before signing up. This will need to include the total monthly charge for services, additional fees, equipment rentals (if any) and taxes.

Providers are also be required to relay the same information to the customer within 24 hours of signing up. There will be no penalty or fee for canceling the subscription after reviewing this information.

"While the TVPA doesn't do much to help existing pay-TV customers, it would help new customers avoid signing up for a service they can't afford," [Public Knowledge wrote in a blog post.](#) The organization helped push the bill through Congress.

Before you get excited about the prospect of paying less, pay-TV providers will likely handle the situation differently. Comcast has already done away with rental fees on owned equipment, but others have remained silent.

The new regulations also don't apply to existing customers. It is only aimed at new subscribers, and it won't stop providers from increasing fees to recoup the losses.

As long as all fees are disclosed upfront, you will be better informed to make a wise decision on which services you'd like to sign up for. Transparency is always best for consumers. ☺

Tip: See all your open windows

If you have a lot of windows open, the taskbar can become cluttered with shortcuts and apps. There's a much faster way to see which windows are open without having to search through the taskbar.

Press and hold down the **Alt key**, then press the **Tab** key. Windows will show you a snapshot of what's open.

While holding Alt down, you can select a window either by tapping Tab or using your mouse cursor. To close a window, just click on the X in the top-right corner of the preview.

If you use Microsoft Edge, this action will also include any open browser tab. ☺

P*PCompAS Newsletter
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Coming Events:

Next Membership Meeting: 2 January @ 9 am, via Zoom

Next Breakfast Meeting: 16 January via Zoom

Newsletter Deadline: 23 January

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

