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PATACS Posts

Newsletter of the Potomac Area Technology and Computer Society

Member of apcug An International Association of Technology & Computer User Groups

JUNE 2020 **www.patacs.org** **Page 1**

PATACS/OPCUG
3rd Saturday, July 18
1:00 - 3:30 P. M.

Session via Zoom - Meeting Access Will Be Sent via Email

Password Managers:

By Ray Parker

A Quick Tour and Why You Should Be Using One

Secret Password: 123456 **:) :) :) Not Exactly**

Or My Birthday **HMMMM** **Or ???**

Due to the constant pressure from security breaches and the growing need for us to transact business online, the awareness of Password Manager products has changed from "What's a Password Manager?" to "Which Password Manager do you use?" However, even with that attention, there are still many questions to ask and answer regarding why you should be using one, and which one to use.

In this session, Ray Parker will take us on a quick tour through a short list of some popular password managers (individual products as well as browsers) to give you an idea of their relative strengths, and explain how best to navigate the changing world of authentication.

We will also review some information about related tools that can help you in your daily practice: modern (2020) password standards, and two-factor authentication (2FA).

Ray Parker has been engaged on the front lines with computers for 40 years, including very large mainframes, rack-mounted distributed systems, personal computers, and now smartphones. Sheer curiosity drove all of that and keeps him interested in how to make these machines easier for people to use, while the industry takes two steps back for every single step forward. He has filled many roles: software developer, system and network administrator, pre-sales, support, workshop facilitator, and educator; and believes that information takes on greater value when shared.

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VIRTUAL MEMORY AND SSDs

How to speed up your computer, and why SSDs might not be the best choice

By John Krout, PATACS member

When I was in computer science grad school, in the late 1980s, one required course included an education on Virtual Memory and the ways operating systems implement that idea.

The knowledge stuck with me, though I am not an operating system developer. As it happens, since that time, almost all personal computer operating systems have implemented Virtual Memory. Virtual Memory has become an important part of ***your*** Windows, Mac or Linux computer system at *home*. Virtual Memory is a very critical part of any operating system that enables you to run multiple applications at the same time.

Random Access Memory (RAM) is finite in any computer system. Today, home computer RAM is measured in gigabytes. Not so long ago, home computer RAM was measured in megabytes.

The goal of Virtual Memory is to allow your computer to act like it has almost unlimited memory available to support the simultaneous running of multiple applications. The operating system controls access to actual memory and virtual memory usage to make every running application think it has 100% of the memory needed to run, even if the actual memory is fully in use by other applications and therefore not available to all the applications.

Sounds rather magical, doesn't it?

The way that particular sleight of hand is accomplished has an important impact on how well or how poorly your computer runs your applications. It also has an impact on your current use, or possible future use, of Solid State Drives (SSD).

When any application is started up, both its executable software and its pre-allocated data spaces are loaded into in RAM. Additionally, while the application runs, the application may also ask for on-the-run allocations of temporary memory.

Keep in mind that the operating system itself exists as a group of running processes, and those too use some of the RAM. So, once that operating system is running, you never have 100% of the installed RAM available to you.

So, how does an operating system *manage* memory use?

When a new application is started, and unused memory is sufficient for that application, then the application is loaded into unused memory. Suppose instead that your computer is running a dozen or more other applications at the time, and sufficient unused memory is simply *not available* for starting up the application. This is indeed a common situation. E

In that case, the operating system chooses one or more of the running applications to be *removed* from RAM and to be stored on the hard drive temporarily. It stores the removed application in a hard drive area knowing as *swap space* or *paging space*. That removal action is called *swapping out*. That action increases the amount of unused memory. Once enough unused memory exists for the new application, then the operating system loads and runs the new application.

Continued Page 3

Windows does not literally close the window of an application that is swapped out. Instead, the window remains on the screen. When you click on a window for a swapped-out application, the application has to be swapped back into RAM from the hard drive. And that effort may begin with swapping *other applications* out of memory and onto the hard drive, to make room for the application being swapped in.

There is no proven best way to choose an application to be removed from RAM when necessary. So various types of virtual memory management policies (meaning arbitrary rules) exist. The most widely used policy type is called **Least Recently Used** (LRU), meaning to swap out of memory the running application that has been idle the longest. Defining "idle" is one way the actual implementation of LRU varies from one OS, or one version of an OS, to the next.

So, an important part of any Virtual Memory approach is to have plenty of of memory, and plenty of swap space available on the hard drive. Another important part is to have a *fast* hard drive. Having plenty of memory assures that swapping is not frequent. With enough speed, the user may not even notice that swapping takes place before an application can react to a mouse click.

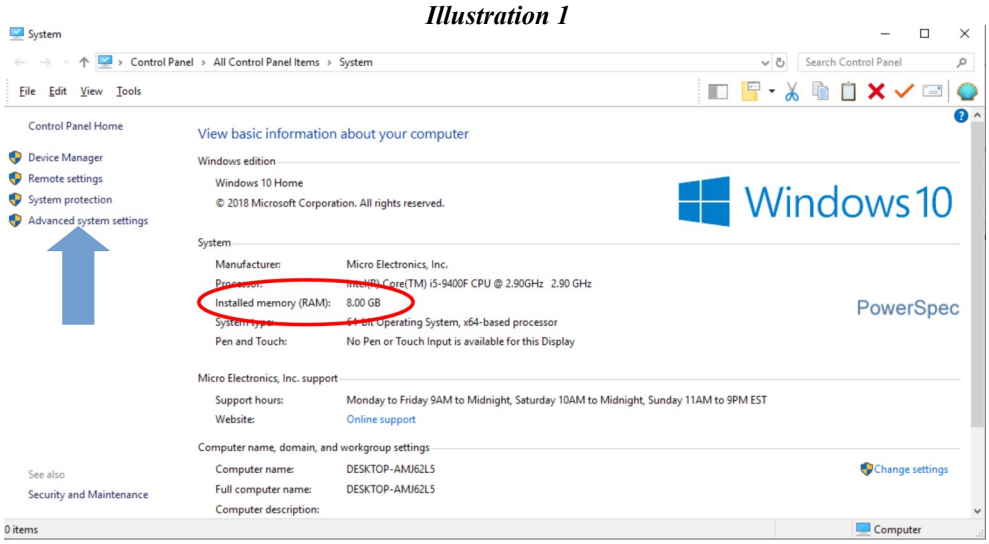
The most important part is to maximize RAM itself. If your computer contains say 4 gigabytes of RAM, and its motherboard DIMM slots can contain more than that, say 8 gigabytes, you will speed up your computer considerably by increasing RAM to the maximum amount permitted by the motherboard DIMM slots. Maximizing the amount of RAM reduces swapping considerably.

Why is that so? Because moving anything out of RAM and onto a hard drive, or back into RAM, is a *slow process*. Hard drive read and write speeds are much slower than RAM read and write speeds, possibly 100 to 1,000 times slower. Worse yet, when you click on the application window, and the application is currently swapped out, then the operating system may need to swap out some other application before loading the clicked application from the swap space, all of which takes a very long time.

Minimizing the need to swap by maximizing RAM is the most reliable way to speed up your computer.

Secondarily, if you have abundant space available on your hard drive, consider doubling swap space. Yes, your operating system does enable you to do that. The exact technique varies depending on your operating system and its version.

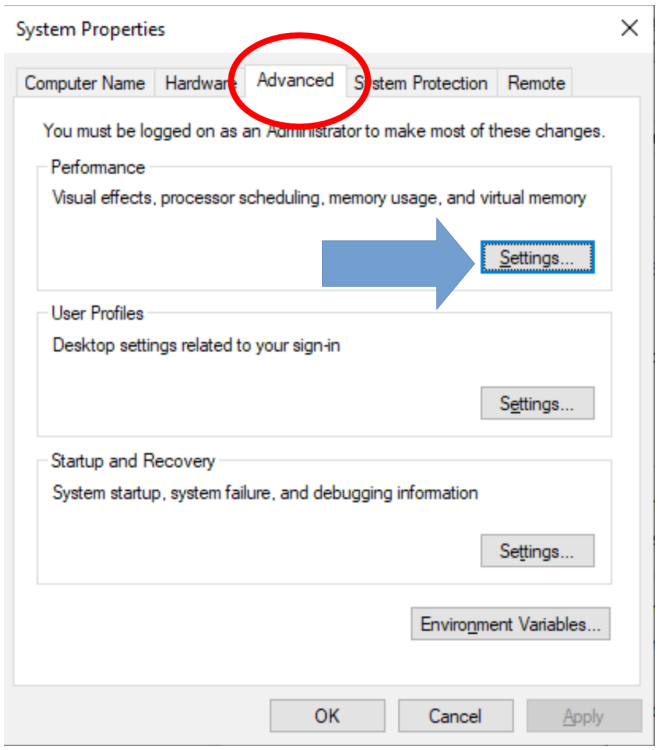
Illustration 1



I looked at Windows 10 on my personal desktop computer. I found the Virtual Memory paging space configuration this way. Control Panel -> System shows you the amount of memory currently in your computer, as depicted in **Illustration 1**. That amount of info is circled in the illustration.

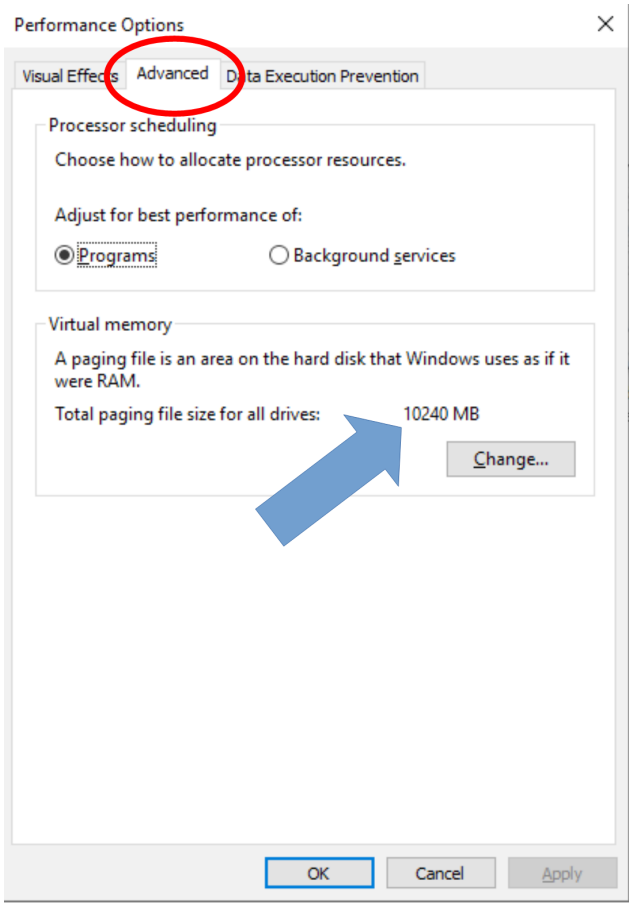
Continued Page 4

Illustration 2



In that window, in the left hand pane, click on the Advanced System Settings link. That link is identified by the arrow in Illustration 1. That click opens a System Properties dialog box, shown in **Illustration 2 at left**. Click on the Advanced tab in the dialog box. That tab is circled in Illustration 2. In the Performance section, click on the Settings button. The arrow in the illustration points to that button.

Illustration 3



That opens a second dialog box entitled Performance Options, shown in **Illustration 3**. Click on the Advanced tab in that dialog box. That tab is circled in the illustration. You will see the current amount of paging file space, and you will see a button enabling you to change the amount. The arrow points to the current amount.

There I found that my Windows "paging file" size ceiling is 10,240 megabytes (roughly 10 gigabytes). “Paging file” is the term Windows uses for swap space on disk. That amount is more than the entire amount of RAM in my desktop computer. Is that really needed? Indeed it could be, if I tried to run far more concurrent programs than RAM on my computer could handle. Also it happens to be a small fraction of the size of my SSD on my desktop computer, so the cost of dedicating that much SSD storage to the paging file is minimal.

Continued Page 5

Solid State Device (SSD) as a replacement for a hard drive

So how do SSDs fit into this Virtual Memory context? SSDs are faster than hard drives. SSDs have no moving parts, so they consume less laptop battery power than hard drives. SSDs are, for now, also more expensive than hard drives, because of the advantages.

There is another important point about SSDs. There are some limits on the use of SSDs.

Every byte of storage on an SSD has a ceiling on the number of times its value can be changed, or re-written. After that ceiling is reached, the byte cannot be changed reliably. The ceiling varies, with some SDDs built for far higher ceilings than others. As you can guess, the highest SSD ceilings are usually associated with the highest SSD prices.

Don't get me wrong, SSDs in general are quite durable.

By comparison, the magnetic surfaces on hard drive platters have no such limit, at least according to the research summaries I have read online. Hard drive failures are usually associated with the moving parts: the motor, bearings, the read-write heads. Heat often plays a big part in making moving parts fail.

I read a February 2018 article online that stated the actual ceiling in SSDs at that time ranged from 30,000 to 100,000 writes per byte. The high end is terrific, the low end less so. And of course research and innovations raise the ceiling over time.

For purposes of this article, let's call any storage byte on an SSD that has been changed too many times an *exhausted byte*.

For that reason, I do not store any documents or data files on the SSD on my desktop computer. I use a pair of separate hard drives for data files.

Some of the most frequent changes on any storage are done when it is used as swap space. So the write ceiling on SSDs make it a bit risky to use an SSD rather than a hard drive as swap space. The temptation to use an SSD for drive C in Windows is strong, because SSDs are *very* fast. In laptops, SSDs are more rugged than hard drives. A physical pounding that would force a hard drive head to crash, scratching a groove across the hard drive platter surfaces, is less likely to cause damage to an SSD.

You might also think that you are unlikely to hit the SSD wall of exhausted bytes.

The problem is that the operating system moves RAM contents into swap space and vice versa *invisibly*, without telling you the size of the swap or the affected bytes of the storage or, for that matter, even that a swap has occurred. So you have no visible indication how many swaps occur while you are using your computer.

Also, it is not necessarily true that swapping always writes to the *same* portion of SSD storage, or hard drive storage. Swapping 10,000 times does perform 10,000 writes to storage, but not always to *the same bytes* of storage. So it is possible that 10,000 swaps might write to any single byte of storage at most say 100 times, for instance.

I should say also that SSD makers are not selling snake oil. For many purposes, SSDs are good and

Continued Page 6

The best advice, for purposes of avoiding creation of exhausted bytes, includes:

* Maximize RAM in your computer, to minimize swapping

On page 3 I showed how to find out the amount of RAM currently in your Windows computer: go to the Control Panel and click on System.

To find out the maximum amount of RAM your computer can use, go to the web site of a RAM seller like www.crucial.com. The site will provide an option for you to identify your computer make and model, or to let the site analyze your computer, so Crucial can look up the RAM size ceiling.

* If at all possible, shut down the computer completely when you are not using it. Shutting down vacates RAM, making maximum RAM available when you start it up later, and that in turn minimizes swapping.

* Don't leave your computer running with multiple applications active. Shut down the applications that are not constantly needed, so the applications you do need to run constantly have all the RAM they need.

About the only thing I need running overnight even occasionally is an application producing a large print job, such as my annual self-produced calendar at the end of the year. Otherwise, I shut down the computer, and no swaps are done while the computer is shut down.

One of the extensions of Moore's Law, originated by Gordon Moore of Intel, is that the price of RAM has continued to plummet, so computers sold now have far more RAM inside than those sold at the same price five years back. Waiting has its economic advantages.

The price reduction of RAM over time is a long term trend, but not a consistent trend in the short run. Two things have stalled the trend in the past and could do so in the future.

One was a fire at the sole factory that made a critical component for RAM, resin used for making a part of each RAM chip. That drove up the resin price temporarily because its supply was minimal, until the factory returned to service. The price increase was passed onto RAM makers and then to consumers.

The other is a recession, when demand for new computers declines. The economic slowdown in China severely reduced data center growth there as of January 2019, and Intel's quarterly report made public in late January 2019 shows demand for Intel CPUs was slowing down; likewise, RAM demand was down concurrently. Certainly the virus-stricken first quarter 2020 also caused a massive downturn in demand for personal computers.

Soft demand forces RAM prices to increase. Like recessions and virus emergencies, that increase too won't last forever.

ABOUT THE AUTHOR: John Krout is a frequent contributor to PATACS POSTS and occasionally provides presentations on various tech topics at PATACS meetings. Recently he has also produced much of the online documentation at www.patacs.org/zoom.html used by PATACS and GMU OLLI for Zoom teleconferences. He earned his computer science masters degree from Virginia Tech, graduating in 1994. Recently Virginia Tech also chose to provide the Zoom teleconference documentation written by John to its Lifelong Learning participants.

PATACS colleagues:

As many of you are aware, PATACS has been holding joint meetings with the computer club of the Osher Lifelong Learning Institute at George Mason University since 2009, and about 40% of our members are also OLLI members. Since 2006, I've been participating in OLLI. This program has about 1100 members, serving 'experienced adults' in Northern Virginia.

OLLI is now offering its program of a huge number of classes on-line, via Zoom, so you may take them from anywhere with a reliable internet connection. Sessions are typically 85 minutes long. Classes for the summer term will run from 6/22 to 7/31.

Catalog link - download PDF Document:
https://olli.gmu.edu/wp-content/uploads/2020/05/Summer2020-catalog.pdf

As a 'flip book' - https://view.flipdocs.com/?ID=10015627_102998

Special notes about changes to catalog offerings:
https://olli.gmu.edu/cancelled-changed-courses/

A trial membership in OLLI-GMU is $150 <I hear the 'gasps'> - but that's for access to 180 class meetings! Most will be recorded, and available to watch at a later time. Here's what's in the roster / schedule of class sessons (page 45 of the catalog) for the summer term:

One Session Courses	39
Two Session Courses	12
Three Session Courses	5
Four Session Courses	8
Five Session Courses	6
Six Session Courses	8

And there are other programs, like the Investment Forum, that run about 46 weeks a year - 26 during normal class terms, and about 20 other weeks besides.

Give it a look - it's way better than searching the net for crazy cat videos <grin>!

Paul Howard

Osher **L**ifelong **L**earning **I**nstutute
George **M**ason **U**niversity

Viewing Previously Presented APCUG Virtual Conferences
By Nick Wenri

Usually about four times a year, APCUG (Association of PC User Groups) presents a Virtual online conference with presentations of various subjects of interest to PC users. The conferences typically have two separate presentation tracks with up to four sessions each. Participation in the conference is available to anyone, but viewers have to register prior to the start of the conference.

You can go to the APCUG website (www.APCUG2.org) to see details about the latest conference and to register to "attend." In addition for people who either attended and wanted to watch a session that was presented at the same time as the one they viewed or anyone who did not attend the conference, later (2017-Present) conferences usually have a video recording (YouTube) of the session (unless the presenter requested no recording). Earlier (prior to 2017'ish) conferences do not have a video, but do have the slide presentation presented available.

Illustration 1

Here is how you can find the videos or the slide presentations:

First go to the APCUG Web Page (www.APCUG2.org) and then click on "Virtual Tech Conference" on the menu bar.

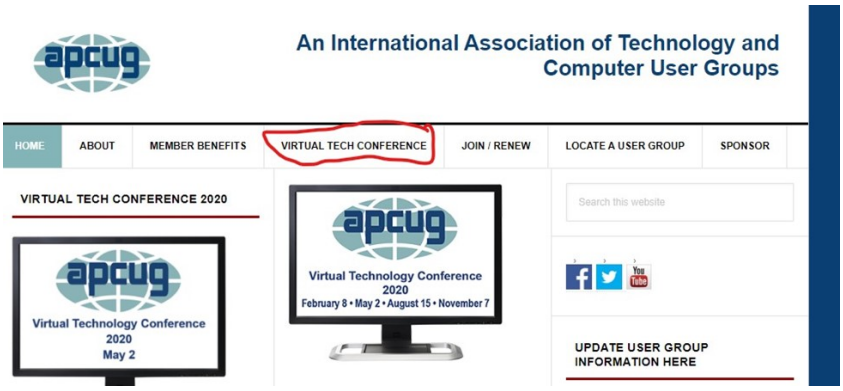


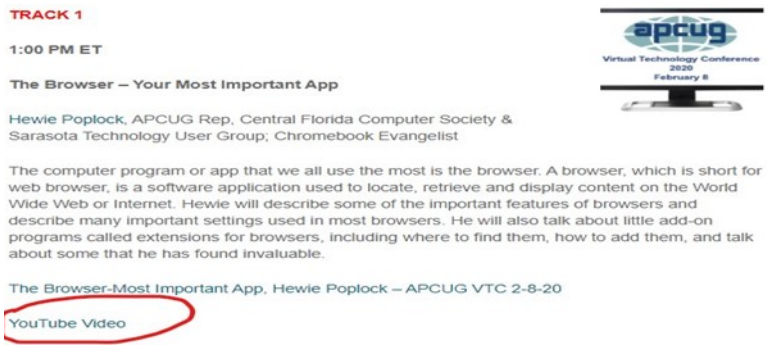
Illustration 2

If you click on the Conference Icon instead, you will only see that particular conference. The menu bar entry will take you to a webpage where you can see the current and past conferences.

Continued Page 9

Once there you can select which conference you want to look at. Click on the conference heading, or the computer display icon to get to the conference details. Then if you scroll down, you will get a writeup about each session. At the bottom of the session you may find links (if recorded) that will take you to either a video of the session presentation or the slides presented.

Illustration 3

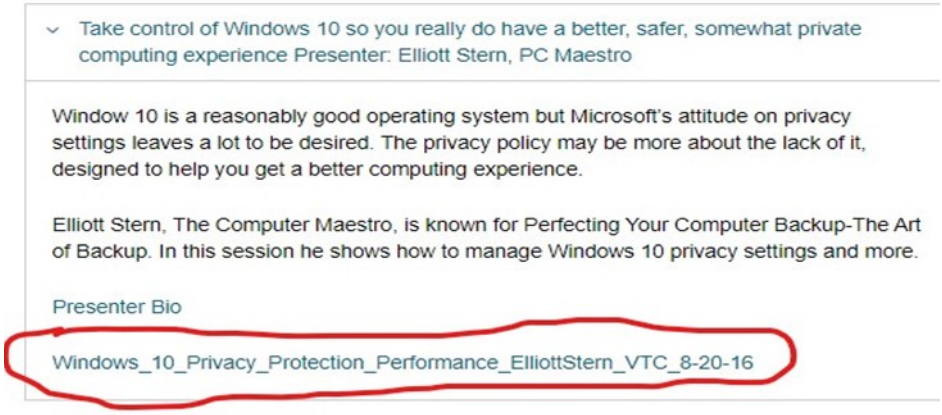


If you scroll down to the end of the page, you will find a navigation bar, like that at the bottom of a Google search where you can go back in time to previous presentations.

Illustration 4

As mentioned before, earlier presentations may not have been recorded and saved as a YouTube video. In those cases, if you scroll down to the end of each session description you may find links to info about the speaker and even the slide presentation for that session.
When selected, that will take you to the slide package for that presentation, or other links related to the presentation, (See page 12, Illustration 6.)

Illustration 5



Continued Page 10

The slide package for that presentation, or other links related to the presentation, (as referred to in Illudtration 5 on page 9)..

I did not find any signup to get notified about upcoming virtual conferences. Keep checking the PATACS website (PATACS.ORG) or the APCUG2.ORG website. Here is a link that will take you directly to the APCUG conference listings. https://apcug2.org/category/virtual-tech-conference/

Illustration 6

Still more benefits for PATACS from APCUG.

Thank you to Gabe Goldberg for volunteering your time and skill in respesenting PATACS to APCUG.

From Gabe Goldberg, our APCUG Region 2 Advisor

New Benefits of Membership.

Many group members have asked if there are other groups having Zoom meetings they can attend. APCUG proposes a monthly list of groups who are having presentations via Zoom that will include the group name, date/time, and name of the presentation.

Judy Taylour will contact the groups that are using Zoom for presentations to determine which groups want to participate and open their online meetings to members of other groups.

After checking the list on www.apcug2.org, those wanting to attend another group's meeting should complete the form included on the page. Judy will acknowledge receipt of the form and forward the request to the appropriate group representative. Just like the Speakers Bureau requests, she will step back, and the rest is up to the group and the person requesting to attend the meeting.

Changes coming to the Speakers Bureau form. Since many groups are using their Zoom account or one of APCUG's free Pro accounts for meetings, there will be checkboxes for:

- We wish to use the presenter's Zoom account
- We will be using our Zoom account**

Another checkbox will be:

- This meeting is open to other APCUG member group members. (Judy will automatically add this presentation to the list on the website.)

**If a group is using its own Zoom account, the presenter should be upgraded to Co-host and the Host of the meeting should mute everyone during the presentation.

Questions And Answers From the PATACS Discussion Group: PATACS2 patacs@groups.io

By Kathy Perrin

Following is some of the discussion activity of PATACS2, the PATACS Discussion Group. It is an excellent example of those who know so much sharing with those of us who do not. A major strength of PATACS over the years/decades has been and is the thoughtfulness of those with such a vast level of knowledge which offers the gift of an environment where we can all continue learning in a kind, encouraging atmosphere.
Take a look at what the group offers, whether you choose to remain a lurker who observes or a participant who both learns and contributes to the learning of others. The questions of those who know not as much can be very enlightening and informative to those who know so much.

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A good article on lighting for video applications:

https://www.howtogeek.com/673264/how-to-look-better-on-zoom-and-other-video-calling-apps/

****

Has anyone found a solution they like to password protecting folders or content of a specific folder or folders (e.g., copies of tax returns) for a Windows 10 based system?
Have you considered VeraCrypt?
Wikipedia article - https://en.wikipedia.org/wiki/VeraCrypt
VeraCrypt Home Page - https://www.veracrypt.fr/en/Home.html

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Recommendations for iPad stand
Very handy for Zoom events
https://www.amazon.com/s?k=ipad+stand&ref=nb_sb_noss_1

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How to Connect Your Laptop to Your TV For Games, Movies, or As a Second Monitor by Wilt Greenwald
https://www.pcmag.com/how-to/how-to-connect-your-laptop-to-your-tv

My mailbox is under quarantine. Not accepting bills at this time.

APCUG - Online Workshops: Getting to Know Windows from An Insiders Point of View

The second Wednesday of the month at: 9 am PT, 10 am MT, 11 am CT, 12 pm ET
July 8, 2020 and August 12, 2020 Moderator: Bill James, APCUG Advisor, Region 8

APCUG is pleased to announce that we will be having online workshops during the summer and fall.

The four 2-hour workshops will be on how to get the best out of Windows 10. There will be how-tos, hands-on demos, and discussion with ample time for Q&A.

July 8 File Explorer
Back-in-the-day, Bill Gates told us to think of our hard drive as a file cabinet and to organize our files. File Explorer is our handy file cabinet. We'll dig into File Explorer to see how it can help us with our daily life with our computer. Have you added the helpful checkbox?

August 12 Edge
It's now a Chromium-based browser. It brings a lot of new features to the table. We will explore all of them and find out if it is the best browser. We'll also learn how to earn $$ by using Bing.

We will use the same Zoom password encrypted meeting URL for each workshop. You will receive the URL after you have registered by completing this form.

September 9, 2020	Week 1 - Why do I need it?
October 14, 2020	Week 2 - Where do I start?
November 11, 2020	Week 3 - Lights, doorbells, locks, and cameras
December 9, 2020	Week 4 - Doing It Myself vs Having It Done

The next series of workshops will be on Home Automation for Seniors – same time, same place on:

We will begin by explaining why home automation is important to seniors. What products are on the market, costs, security, and some real-world testimonials. In the second week, we will talk about how to go about planning your home automation project and best practices. In the third week, we will talk about applications using lights, doorbells, locks, and cameras. Lastly, we will talk about the benefits of making it a DIY project or having a professional install.

Judy Taylour

www.apcug2.org
www.facebook.com/APCUG
www.twitter.com/apcug
www.youtube.com/apcugvideos

6 Best Apps for Comparing Gas Prices at Nearby Stations

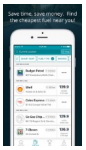
From techboomers.com

With gas prices constantly fluctuating, it can be hard to keep track of what price to expect when you're heading to the gas station. We all know the disappointed feeling of pulling away from the gas station after filling the tank, only to drive past another station with a lower price. Everyone wants to get the most gas for their money, but driving around town to see which station has the best price can be frustrating and feel like a waste of time. Luckily, there are now apps available that can do that work for you. If you want to find the best price in your area, you can do so with a mobile gas app. In this article, we'll be telling you about our favorite apps to compare gas prices. To start off, let's talk about how these kinds of apps work.

How do gas price apps work? Gas price apps work by providing users with the gas prices for each gas station in a certain area. This way, consumers can instantly find the cheapest price. Most of these apps rely on users for information – customers and gas station employees report gas prices on the app to keep information accurate.

If you arrive at a gas station and notice that the price listed on the app has not been updated to the current price at the pump, you can notify them that the price has changed so that other users will have the most up-to-date information. Some apps will even offer incentives or rewards to users who contribute information.

Now that we've talked about how gas price apps work, let's discuss some of the best ones.



1. GasBuddy GasBuddy is one of the most popular gas price apps available It is available for free in the U.S. and Canada. They provide gas prices for many cities, and even have country-wide maps that allow you to compare gas prices across the entire country at a glance. GasBuddy also has a "Trip Cost Calculator" feature, which can help you figure out the best places to fill up along the way when you're on a road trip.

Best Feature: Trip Cost Calculator. Download the app: iOS – Android

2. Gas Guru Gas Guru is another local gas price app, similar to GasBuddy. In this app, you can view a map marked with gas stations in your area, and check which ones have the best prices, or see a list of gas stations in your city sorted from lowest to highest price. You can filter your station search to find stations that carry the specific grade of gasoline your vehicle requires, and get more information like a gas station's hours of operation and phone number.

Best Feature: Advanced search filters and gas station information. Download the app: iOS – Android

3. Waze Waze is a sort of all-in-one app for drivers. It provides information on gas prices, traffic, and directions. You can also report accidents and other issues that may slow down other people's drive, and find information that other Waze users have reported that may affect your own commute. The intention of this app is to help improve everyone's daily drive.

Best Feature: All-in-one driving app provides much more information than just gas prices. Download the app: iOS – Android

4. Dash There's also Dash, a cheap gas app that provides its users with lots of useful information including gas pricing, maintenance shops, and more. Also, Dash sells devices that connect to your car called an OBD (On Board Diagnostic) device that can give you information about your car, like its efficiency, engine temperature, and more. You can still use the app without one of these devices, but an OBD allows you access to more of the app's helpful features.

Best Feature: Can provide basic diagnostic info for your vehicle. Download the app: iOS – Android

5. GasTracker Gas Tracker is another awesome gas app to try. It allows users to locate the best gas price in their area, keep track of when they've filled their tank, as well as keep track of their vehicle maintenance. If you subscribe to the GasTracker emailing list, you can also get a monthly summary of your gas purchases. The app is available for free on a variety of devices, though it's apparently no longer available for iPhones or iPads.

Best Feature: Keeps track of your gas purchases. Download the app: Android

Continued Page 14

6. Fuelzee Fuelzee helps users in the U.S. find gas stations near them and figure out which station is offering the lowest price. When you report gas prices on the app from stations around you, you can earn points on the app. When you get up to a certain number of points, you can redeem them for a voucher for free gas!
Best Feature: Earn points for free gas. Download the app: iOS

Those are all of the gas apps we recommend using to instantly find the cheapest gas prices in your area. Looking for other things to help you make your next road trip great? Check out our Google Maps course to help you plan out your route, and this article to learn the best ways to connect your phone to your vehicle's stereo system.

UVA Cyber Defense Team Brings Coveted Alamo Cup Back to UVA

Again, And Again, And Again

https://engineering.virginia.edu/news/2020/05/uva-engineering-wins-third-consecutive-national-cybersecurity-championship

FROM APCUG

Sticky Passwords

APCUG is pleased to announce that Sticky Passwords has created a landing page on their website that will give APCUG members a 40% discount on their Pro password protection program:
1 user / 1 year: $11.99 – 1 user / Lifetime: $41.99
https://www.stickypassword.com/lp/apcug

 PATACS Information Monthly Circulation: 90

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Club Information call: 703-370-7649 Web Site: www.patacs.org

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Publicity……...……Volunteer Needed

Posts is an official publication of the Potomac Area Technology and Computer Society (PATACS), a Virginia membership corporation, a tax exempt organization under section 501(c)(3) of the Internal Revenue Code. Contributions are gratefully received and tax deductible. We encourage our members to organize small topic-specific meetings at your choice of time/place. For further information or suggestions chat with any officer or director. Tech clubs often have Special Interest Groups (SIGs) on topics such as photography,Windows, Apple products/services, genealogy, financial applications, and much more. SIGs offer members the opportunity to find others with similar interests and increase knowledge in specific areas. We are very fortunate to have members with many skills they generously share.

OPCUG / PATACS Saturday Meetings

In person meetings are not currently being held due to COVID-19. Join us on ZOOM.

1:00 – 1:19: Q&A – detailed responses may be deferred to post-meeting communication.

1:20 – 1:50: 'Learn in 30' Presentation

1:50 – 2:00: Break in Coffee Room / Annex

2:00 – 3:20: Featured Presentation

33:30 – Adjourn (Expect some flexibility in scheduled times. Order may be varied to accommodate scheduling needs of our valued presenters.)

Meeting Information and Agenda

In June and December, a PC Clinic / Tech Help session is run concurrently with the meeting from 1 PM in the Annex.

See: https://www.patacs.org/clinicpat.html

With the concurrence of presenters, meeting sessions are webcast using the Zoom.us cloud meeting service.

Dues-paid members may 'attend' from remote locations, using the meeting number information provided on the PATACS website.

Please see:
https://www.patacs.org/mtgdetpat.html#3rdsat

Need more information about Zoom?
Contact: webinarhosts@patacs.org

PATACS, Inc.
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First Class

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July 2020 PATACS Event Calendar
Call (703) 370-7649 for Meeting Announcements

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1 7-9pm Program By Zoom	2	3	4
5	6	7	8 7-9pm OnlineMeeting By Zoom	9	10	11
12	13	14	15	16	17	18 1:00-3:30 GeneralMeeting By Zoom
19	20 7-9pm Board Meeting By Zoom	21	22 7-9pm Tech&PC Help Desk By Zoom	23	24	25
26	27	28	29	30	31	