



July 2019

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Ken Johnson, Newsletter Editor



CALENDAR

SIG = Special Interest Group



This Weeks Schedule

July 20 - Saturday - 1:00-3:00 PM

[General Meeting](#) - Leader: Ray Carlson

Location: Prescott Public Library; Founders Suite A & B

First Hour: Security Innovations

Ray Carlson will look at the most recent advances in personal cybersecurity. Based on discussions with our members, there appear to be increasing efforts to send fake emails and phone calls that lead to phishing, pretend ransomware, and other forms of fraud. In addition, a number of apps have been shown to share data without the person's permission. This presentation will consider ways to avoid giving out your email address and/or phone number to criminals, how to recognize scams, what are riskier apps, and what action to take if you are victimized.

Second Hour: Phil Ball will present Tips and Tricks with insights into various topics that assist with regular computer activity. In addition to the presentations, the following are typical events which take place at our General meetings:

In addition to the presentations, the following are typical events which take place at our General meetings:

- 1) We hold an informal Flea Market in which you are encouraged to bring in your excess computer equipment or software and make them available for others to enjoy at no charge. Please deposit give-away items on the table in the back marked "Free Stuff." Any items left here at the end of the meeting are subject to disposal.
- 2) If you have items that are just too good to give away, you may set up a separate table and hold your own sale.
- 3) We conduct a free drawing for gift cards at the end of the meeting, so make sure to get a pair of tickets from whoever is in charge and place one in the container provided.
- 4) We will also accept your used ink and toner cartridges for recycling. They are turned in to Think4Inc for credits which PCS uses to purchase office supplies from them.

Future Meetings:

July 23 - Tuesday - 10:00-11:00 AM

Technology Help Hour - Leader: PCS Staff

Location: Prescott Public Library Training Lab; Third Floor

Ask a technology question and get help from members of the Prescott Computer Society. Bring your own laptop or mobile device or use a library laptop. This is a weekly drop-in service and registration is not required.

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July 27 - Saturday

No PCS meeting is scheduled.

July 30 - Tuesday - 10:00-11:00 AM

Technology Help Hour - Leader: PCS Staff

Location: Prescott Public Library Training Lab; Third Floor

*Note that these dates are correct at time of publication but are subject to change.
Up to date information [can](http://www.pcs4me.com) be found on our website, www.pcs4me.com*

Prescott Computer Society
Current Officers & Board of Directors

Officers:		General Directors:	
President	Ray Carlson	Joan Baum	Murray Smolens
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**Welcome to
NEW MEMBERS**

**Dorothy Maxwell
Susan & Ken Rogers
Jim Portzer**

32-bits, 64-bits – How many do I need?

By Phil Sorrentino, Contributing Writer,
The Computer Club, FL

January 2019

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Over the past few years, Personal Computers have been moving from 32-bit Central Processor Units (CPU) to 64-bit CPUs. (Actually, 64-bit CPUs were first introduced way back in 2003, but it takes time to get new CPUs through the design/manufacture/produce cycle to finally provide “affordable products”.) So it’s not a matter of how many you need, it is a matter of what is on the market. From a user’s point of view, the main difference between 32-bit and 64-bit CPUs is performance. Performance is basically the speed at which the CPU can complete tasks and is measured in calculations per second: the faster the CPU, the higher the performance. Additionally, 64-bit CPUs can come in dual, quad and eight core versions which can provide further improvements in performance. Another difference is the maximum amount of RAM memory that can be accessed. 32-bit CPUs can access a maximum of 4 GB, whereas a 64-bit CPU can access far beyond 4 GB, which is necessary if you are using software to accomplish things like video editing or graphic design. In general, the more bits you have, the better the processing performance and capability, and therefore the better your computing experience.

The CPU defines the architecture. A 64-bit CPU is used in a 64-bit architecture and a 32-bit CPU is used in a 32-bit architecture. Today, almost all PCs are built around the 64-bit architecture, giving you the best possible computing experience if you only consider the number of bits. (Other contributing factors to your computing experience might be Internet connection speed, display size, hard drive size, and the number and speed of USB ports.) The Operating System (OS) software is intimately

connected to the hardware architecture. That said, keep in mind that a computer with a 64-bit architecture can have a 64-bit OS or 32-bit OS installed; however, the 64-bit architecture with a 32-bit OS installed will not provide the 64-bit architecture’s full capability. Also note that the 32-bit architecture can only run a 32-bit OS. Windows 10 is built for the 64-bit architecture as was Windows 7, unlike Windows XP and 95 which were built for the 32-bit architecture.

A quick look in the rear-view mirror shows the original PC that was released in 1981 by IBM. This early PC was built around a 16-bit architecture which was quite a bit less capable than our current 64-bit or 32-bit CPUs. (The initial CPU was an 8088 which actually used 16 bits internally, but had an 8-bit Input/Output (IO) interface (possibly to keep costs down and possibly to interface to certain peripheral devices), making it a hybrid of sorts, 16 bits internally for calculations and 8 bits externally for I/O.) PCs that followed used the 8086 CPU which was a true 16-bit processor. 32-bit computers started to appear as early as 1985 with the Intel 386 CPU. Improvements in the 32-bit architecture continued from the mid 1980s till the 64-bit processor arrived in 2003. The 64-bit architecture has been improved over the past 15 years and the cost has been reduced to the point where almost every PC produced today has a 64-bit CPU in it. If you are looking for a new computer, definitely go for the 64-bit architecture. (You can find the architecture and OS information in Settings-System-About. In this window, “System type” will show the number of bits for the processor, and also the number of bits for the OS.)

The number of bits in a particular PC architecture indicates the number of bits used in calculations and the number of bits used to address an item in memory. So, a 64-bit architecture has a 64-bit Arithmetic/Logical Unit at the heart of the CPU and can address up to 2^{64} or 16 exabytes in memory. (Note, not all PCs are built to take advantage of this large memory space, in fact

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most are limited by their hardware design to less than 512 Gigabytes.) An Exabyte is a very large number it is a million-million Terabytes. To put it in perspective, see the following table:

1024 Gigabytes=	1 Terabyte
1024 Terabytes=	1 Petabyte
1024 Petabytes=	1 Exabyte

On top of the hardware limitation, which is not really very limiting, the Operating System in use places some limitations. The following table shows the limitations for some of the popular versions of Windows 10:

Operating System	Maximum Memory (RAM)
Windows 10 Home 64-Bit	128GB
Windows 10 Pro 32-Bit	4GB
Windows 10 Pro 64-Bit	512GB

So, considering the number of items or bytes that we currently concern ourselves with, 4 to 32 gigabytes of RAM memory, and maybe 4 to 12 terabytes of hard drive space, the 64-bit architecture will probably take us pretty far into the future.

If one were purchasing a new computer, the best situation would be a 64-bit hardware architecture with a 64-bit OS and all 64-bit drivers. You would probably get this if you bought a middle to high end PC from a popular company like HP, Dell, or Lenovo. Low end or economy models might have a 32-bit or a 64-bit architecture. Note that if the amount of installed memory was over 4 GB then it would have to be a 64-bit architecture. If one did purchase a PC with a 32-bit architecture it would probably have a 32-bit OS installed. Knowing what OS is installed on your PC is important if you are installing new software. If your new software is built for a 64-bit OS, it will only run on a 64-bit OS; it will probably not run on a 32-bit OS. If your new software is built for a 32-bit OS then it will probably run on a 32-bit OS or a 64-bit OS. Sometimes a software vendor will make two versions available, one for the 32-bit OS and a different one for the 64-bit OS. So, if you can find it in your price range,

a 64-bit architecture with a 64-bit OS and 12 GB of RAM and a 1TB hard drive would probably satisfy almost everyone's needs, except maybe for a few very serious gamers.Ω

How to stay on course when scrolling up & down a web page

By John Krout, Member, Potomac Area Technology and Computer Society, VA
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At a recent PATACS/OLLI meeting in Fairfax City, a question was raised about scrolling up and down a web page: why does the browser sometimes suddenly revert to the top of the page?

This experience, no doubt familiar to many of us, has to do with pointing device behavior. With a normal mouse or track ball, you click and hold the button down on the vertical scroll bar on the far right of the web page, and then drag the scroll bar up and down.

While doing that, often you are intently reading the visible portion of the web page, and not watching the mouse pointer. I run into this a lot when examining the CNN.com home page. It is easy to let the mouse pointer drift slightly right or left. When the pointer moves off the vertical scroll bar, the web page automatically reverts to the top of page.

This much I explained at the meeting.

Another member proposed a solution, one that I had not previously thought of, and I think it is a very useful solution: obtain a trackball or mouse with a vertical scroll wheel. Instead of moving the pointer in the familiar way, simply rotate the scroll wheel. Up and down the page goes, very reliably, with no drift.

Now, if the problem described above is unfamiliar to you, then read no further. The rest of this article is a brief survey of products you may wish to know about if the problem is one you would like to solve.

After the meeting, I took a look on the Web at mouse and trackball products including such a

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wheel. They are not very expensive.

This is not a recommendation or a review. I just want to show you the bottom of the price range and some options.

From here on I focus on products available from Amazon because of the small commission paid to PATACS by Amazon when you use the link to Amazon appearing on the PATACS.org home page and you spend money on Amazon. The sum total of that income to PATACS from Amazon was a few hundred dollars in the last full fiscal year for the club. That is equivalent to 20+ additional dues-paying PATACS members, far more than I expected, and is why the club offers that opportunity.

I used this search on Amazon: *mouse with scroll wheel*. Then I sorted on low price to high price.

On Amazon, I found there are USB scroll wheel mice for less than \$10, and wireless and Bluetooth scroll wheel mice for less than \$20. All provide a wheel on the top of the mouse, equally accessible for right handed and left-handed use. You will see many such products, even in a choice of colors.

I happen to use a USB trackball for my desktop computer at home, partly because the open space on my desk is often not sufficient for moving a mouse around. So I also looked at trackballs equipped with a scroll wheel.

I used this search on Amazon: *trackball with scroll wheel*. Then I sorted on low price to high price.

It happens that several such trackballs exist. USB trackballs with scroll wheel start at less than \$25.

Logitech tends to put the scroll wheel on top and the ball on the side, which means it is difficult for lefties. Maybe they make left handed versions; I did not nose around enough to find out.

I found a very interesting innovation from Kensington, the trackball brand that I have been using. Their trackball scroll wheel is in fact a ring around the centered trackball.

Incidentally, in that same set of Amazon search

results, I also found keyboards with a trackball and scroll wheel built in. As you might guess, these are more expensive than standalone trackballs, but if your desktop real estate is extremely limited, the all in one keyboard may be of interest to you. [Ω](#)



Security Tips

By David Shulman, WPCUG Weekly Update editor, intergroup liaison, and a co-organizer of WPCUG’s Meetup

November 2018 issue, WestchesterPCNews

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Flash News About Experian: What we know right now is that a hacker acquired the records of approximately 15 million people, including new applicants requiring a credit check for service or device financing from September 1, 2013, through September 16, 2015,” says T-Mobile CEO John Legere in an open letter to customers posted on his company’s website. He added that while Experian was encrypting stored Social Security numbers and identity numbers, it tells T-Mobile that it thinks that the hacker cracked that encryption, thus leaving all of the data it was storing at risk.

Let’s discuss auto key fobs. It appears that your car

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(if you have a fairly new one) “sees” you coming by detecting the key fob as you approach. It’s designed to react only if you are close. The catch is that it has been shown that it is possible to clone YOUR key fob from a distance, then make a duplicate, and come back and drive your car away. The prevention: Keep your key in a container that blocks its signal. See <https://www.komando.com/happening-now/487034/hackers-can-steal-atesla-model-s-in-seconds-by-cloning-its-key-fob>

Passwords—do you hate them? How about changing them every three months? Am I giving you a headache? If so, my mission is accomplished! USE A PASSWORD PROGRAM. Last time I looked I had over 200 passwords. Logging in is a snap, changing them is a snap, remembering them is no big deal because that’s what a password program does. Generating a loooong, unique password that has no recognizable pattern is what they do and you only have to remember one master password. Just do it!

Google has announced a data breach so bad it is killing the entire piece of software. Google + is going away. The bad thing is that this happened months ago and was just recently made public. See <https://www.fastcompany.com/90248177/google-admits-to-potentialgoogle-data-leak-after-getting-caught> Facebook, has yet another leak. 50 million accounts compromised this time. Check this out.

Board member and workshop leader David Lerner says you should read this article on malware removal and protection information. <https://www.pcmag.com/roundup/354226/thebest-malware-removal-and-protection-tools>. How many times have you heard not to plug your stuff into an unknown place without “protection”? (Now that sentence reminds me of a completely different subject that uses the same vocabulary.) Anyway, there is malware that resides in your firmware and cannot be removed except by re-flashing the BIOS. Of course you know how! See <https://www.wired.com/story/fancy-bearhackers-uefi-rootkit/>

Lastly, Microsoft has suspended the rollout of the October update due to the disappearance of files, contact lists, and photos after the install. See <https://support.microsoft.com/enus/help/4464619/windows-10-update-history> So remember, ALWAYS do a complete backup of your system before doing these updates. GOES FOR MACS AS WELL!!

Are the headlines, describing one security breach on another, causing you to pay attention? As a result, this column has been added to the newsletter. Have you found a security-related link? Please send it to wpcug.d_shulman@yahoo.com for inclusion in the newsletter.Ω

...And now for a little humor!

A man was crossing a road one day when a frog called out to him and said, "If you kiss me, I'll turn into a beautiful princess."

He bent over, picked up the frog, and put it in his pocket.

The frog spoke up again and said, "If you kiss me and turn me back into a beautiful princess, I will tell everyone how smart and brave you are and how you are my hero" The man took the frog out of his pocket, smiled at it, and returned it to his pocket.

The frog spoke up again and said, "If you kiss me and turn me back into a beautiful princess, I will be your loving companion for an entire week." The man took the frog out of his pocket, smiled at it, and returned it to his pocket.

The frog then cried out, "If you kiss me and turn me back into a princess, I'll stay with you for a year and do ANYTHING you want." Again the man took the frog out, smiled at it, and put it back into his pocket.

Finally, the frog asked, "What is the matter? I've told you I'm a beautiful princess, that I'll stay with you for a year and do anything you want. Why won't you kiss me?"

The man said, "Look, I'm a computer programmer. I don't have time for a girlfriend, but a talking frog is cool." Ω

Prescott Computer Society

Where you share what you know, and learn what you don't.

