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The Digital

# Viking



## Twin Cities

PC USER GROUP

NEWSLETTER

Minneapolis & St. Paul, Minnesota USA • Vol. 41 No.1 • August 2020

*TC/PC Exists to Facilitate and Encourage the Cooperative Exchange of PC Knowledge and Information Across All Levels of Experience*

**August 2020**

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## General Meeting Tuesday, August 11, 2020 7:00 PM

### Webcam Alternatives

Presenter: Curt Trout

**Via Zoom**

With the ongoing COVID-19 pandemic, conducting meetings and holding family gatherings virtually has become the norm. These virtual meetings require a webcam so that everyone at the meetup can fully participate. As a result of this need, webcams are a hot item on Amazon.com and at other tech stores and, if available, prices have skyrocketed. What's a person to do if you need to buy or replace yours? There are actually some alternatives, such as your cell phone or some digital cameras among other devices. Curt Trout will lead a discussion of some of these alternatives and their pros and cons. If you have found an alternative, please jump in with your experience and add to the conversation. 📹

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**Tech Topics with Jack Ungerleider via Zoom at 6pm before the General Meeting.**

TC/PC is a Member of



**24-Hour Information • [www.tnpc.com](http://www.tnpc.com)**

Application form inside back cover

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# The Digital Viking

The Digital Viking is the official monthly publication of the Twin Cities PC User Group, a 501(c)(3) organization and an all-volunteer organization dedicated to users of IBM-compatible computers. Subscriptions are included in membership. We welcome articles and reviews from members. The Digital Viking is a copyrighted publication and reproduction of any material is expressly prohibited without permission. Exception: other User Groups may use material if unaltered and credited.

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Full page (7½ x 9½)	\$100.00
Two-thirds page (7½ x 6)	80.00
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One-third page (7½ x 3)	50.00
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Multiple insertion discounts available.

Contact Sharon Walbran at: SQWalbran@yahoo.com

Deadline for ad placement is the 1<sup>st</sup> of the month prior to publication. All rates are per issue and for digital or camera-ready ads. Typesetting and other services are extra and must be requested in advance of submission deadlines.

Payment must accompany order unless other arrangements are made in advance. Place make checks payable to: Twin Cities PC User Group

## TC/PC 2020-2021 Board of Directors

Meets once or twice per year. All members welcome to attend.

Visit [www.tpc.com](http://www.tpc.com) for meeting details.

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## TC/PC Member Benefits

Product previews  
and demonstrations

Special Interest Groups  
Monthly Newsletter

Discounts on products  
and services

Contests and prizes

## Business Member Benefits

All of the above PLUS:

FREE ½ page ad on  
payment of each renewal

20% discount on all ads  
Placed in the *Digital  
Viking* Newsletter

Up to 5 newsletters mailed to  
your site  
(only a nominal cost for each  
additional 5 mailed)

## Newsletter Staff

Editor Sharon Walbran

# FREE 2020 SUMMER VIRTUAL TECHNOLOGY CONFERENCE (VTC)

**Saturday, August 15**

1:00 pm – 4:00 pm ET / 12:00 – 3:00 CT

11:00 – 2:00 MT / 10:00 – 1:00 PT

**Register at:** <https://www.eventbrite.com/e/2020-summer-virtual-technology-conference-tickets-115171681600?ref=estw>

**Registration closes at 11:59 PM ET on August 14.**

You do not need an Eventbrite account or eTicket, or a Zoom account to attend the conference.

Download the current version of Zoom: <https://zoom.us/download>

Information about the presentations plus presenter bios: <https://apcug2.org/>

More info: [virtualconferences@apcug.org](mailto:virtualconferences@apcug.org)

## **TRACK 1**

**1:00 PM ET**

### **Saving Your Life with Technology, Part 2**

**Ron Brown, Program Chair, Silvercom Computer & Technology Club**

This is a continuation of Mary's story, who is a fictitious senior, widowed and lives in a resort in Mesa, Arizona. She has a fall at night that results in a broken hip from an undiagnosed heart problem. Part 1 covered the importance of knowing what your heart rate is and the many devices that can monitor and record it. Part 2 focuses on fall detection, emergency notification, and home automation to ensure safety for a senior living alone. Ron will discuss how to set up a home network, the Echo Show, Google Nest, and the new Zoom all-in one home appliance.

**2:00 PM ET**

### **"FreeNAS - A Great Choice For A Home Server"**

**Don Arrowsmith, President, Philadelphia Area Computer Society**

This presentation details how Don replaced his aging Windows Home Server 2011 system.

**3:00 PM ET**

### **Chromebooks for Geeks**

**Bill James, Vice President, Computer Club of Oklahoma City**

A Chromebook does the things that many people want a computer to do, better and faster than any other laptop, regardless of price. It is the most secure portal to the web that has ever been built because of super-fast updates and sandboxing. A Chromebook can pair with your Android phone and be used for messaging and video calling. It is perfect for anyone who wants to grab a laptop, sign in, and spend an afternoon watching Netflix or shopping online. You can also use it as a terminal to connect to your Windows PC or Mac. Chromebooks are Fun! Learn more from this informative presentation.

## Track 2

1:00 PM ET

### Fundamentals of Microsoft 365

**Rob Truman, Webmaster, Computer Booters of Sun Lakes**

A hands-on demonstration to learn how to use the many useful apps included in the Microsoft 365 subscription. Rob will also review the various subscription packages available along with what discounts are available.

2:00 PM ET

### Solve Your Password Management Problems

**Kenneth Tubaugh. Educational Services Director & Program Coordinator**

**Columbus Computer Society - P.S. He's from Region 3**

Password theft is a serious problem. The websites and apps that you use are under attack every day. Security breaches occur, and your passwords are stolen. When you reuse the same passwords everywhere, hackers can easily access your email, bank, and other important accounts.

Stay Safe with a Simple Password Manager. Security experts recommend that you use a different, randomly generated password for every online account that you create. But how are you supposed to remember and keep up with that many passwords? Bitwarden Password Manager helps you create and manage secure passwords so that you can get back to enjoying your life online.

3:00 PM ET

***YOUR PRESENTATION COULD BE HERE (We just might have a presentation for this slot.)***

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## Bluetooth 5.0 – Improved Wireless Technology

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

**March 2020, [www.scccomputerclub.org](http://www.scccomputerclub.org)**

**Philsorr (at) yahoo.com**

Bluetooth 5.0 is a noticeable improvement over the previous version and is finally finding its way into new devices. If you have had problems with Bluetooth pairing or staying connected in the past, Bluetooth 5.0 may improve or even fix the problem. But, both devices will probably have to be up to the new standard.



Bluetooth is a wireless technology standard used for exchanging data between fixed and mobile devices over short distances. Both Bluetooth and Wi-Fi are examples of wireless technology that use the unlicensed 2.4GHz frequency spectrum. Both have many applications in today's offices and homes such as: setting up networks, printing, connecting

cooperating devices, and transferring data files among computers and smart devices. Wi-Fi vs. Bluetooth.

Wi-Fi is intended as a replacement for cabling in large work areas. Bluetooth is intended as a replacement for cabling among equipment in close proximity. Wi-Fi is intended for use as a local area network (LAN). Bluetooth is intended for use in a smaller, personal area network (PAN). (Just for completeness, a Wide Area Network (WAN) is a communications network that spans large geographic areas such as cities, states, or even countries – think Internet.)

Bluetooth, nowadays, can typically be found in smartphones, laptop computers, tablets, headphones, and almost all new cars. Seven years ago I explored Bluetooth and reassured everyone that it was not a dental diagnosis. At that time, it was at version 4.0 so it's probably time to take another look. Technology is always evolving and hopefully improving.

Here is a little history for you tech history buffs. Bluetooth has been around for quite a while. Work on Bluetooth was started in 1994 and the Bluetooth 1.0 specification was released in May 1998. The initial Version specified a data rate of fewer than 1 Mbps (Megabits per second). It had many problems, and manufacturers had difficulty making their products interoperable. Bluetooth 2.0 was released in November 2004 with a faster data rate (approx. 2 Mbps). Bluetooth 3.0 was released in April 2009. Bluetooth 4.0 was released in June 2010. Bluetooth 5.0 was released in June 2016 with increased range, speed and capacity, and is the current standard. Bluetooth 5.0 is improved in many categories as shown below:

Feature	Bluetooth 5.0	Bluetooth 4.0
Speed	2 Mbps	1 Mbps
Range	40 Meters	10 Meters
Message Capacity	Larger	Small
Battery Life	Longer	Shorter
Reliability	Higher	Low
Security Control	Better	Less secure

Bluetooth was originally conceived as a wireless alternative to the old serial RS-232 data cables. Bluetooth is a network and thus can connect many devices, unlike RS-232 which was strictly serial point-to-point. Bluetooth is a wireless technology that uses short-range radio links and is intended to replace the cable(s) connecting portable and/or fixed electronic devices. The hope is that it will allow for the replacement of the many proprietary cables with one universal radio link. Bluetooth can provide a way to connect and exchange information between devices such as Smartphones, laptops, personal computers, printers, Global Positioning System (GPS) receivers, digital cameras, video games, et al.

So, Bluetooth is a communications standard for interconnecting electronic devices. To that end, it uses a form of data packet switching to transmit digital data via the wireless communications link. Bluetooth operates in the unlicensed ISM (Industrial, Scientific, and

Medical) 2.4GHz frequency band, and avoids interference from other signals in that band by hopping to a new frequency after transmitting or receiving each packet. This radio technology is called frequency-hopping spread spectrum. It chops up the data being sent and transmits chunks of it on up to 79 different frequencies. (Guess who invented frequency hopping? Answer at the end of the article.)

Bluetooth is primarily designed for short-range communications with low power consumption. There are three power levels defined in the standard, 100 mW (Class 1), 2.5 mW (Class 2), and 1 mW (Class 3) where mW (milliwatt) is a measure of transmitter output power. The higher the power level, the further the data can possibly be transmitted. Class 1 suggests an operating range of up to 100 meters, Class 2 suggests 10 meters, and Class 3 suggests 1 meter. Most of the devices I've used have been Class 2.

Because Bluetooth devices use radio (broadcast) communications, they do not have to be in the line of sight of each other. Bluetooth makes it possible for these devices to communicate with each other and transfer the information as long as they are in range. A PC uses a Bluetooth adapter to communicate with other Bluetooth devices. While some desktop computers and most recent laptops come with a built-in Bluetooth adapter, others require an external adapter, usually in the form of a Bluetooth Dongle. Bluetooth allows multiple devices to communicate with a computer over a single adapter. Microsoft Windows 10 supports Bluetooth 5.0, but your computer may have a Bluetooth device that was built to an earlier Bluetooth version. (Along with the Bluetooth version, there are Bluetooth Profiles, but we'll leave that as a subject for a future article.)

Though you may not have thought about it, here are some of the more common applications of Bluetooth:

Wireless control of, and communications between, a mobile phone and a hands-free headset. This was one of the earliest applications.

Wireless communications with PC input and output devices, the most common being the mouse and keyboard.

Replacement of traditional wired serial communications used in test equipment, GPS receivers, medical equipment, Bar code scanners, and traffic control devices.

A link between game consoles such as the Nintendo Wii, and the Sony PlayStation and their respective controllers.

A link between a video camera and a remote Baby or Pet Monitor.

A link between a Garage Door Opener Motor and the Remote Garage Door Opener Controller.

An audio link between a Smartphone and speaker or headphones.



As you can see from this list, there are many reasons for computing devices to communicate with each other. And as more devices become smart, there will probably be more uses for the Bluetooth wireless technology. 

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# Make Windows 10 Faster

By David Kretchmar, Computer Technician, Sun City Summerlin Computer Club

April 2020 Gigabyte Gazette, [www.scscc.club](http://www.scscc.club)

dkretch (at) gmail.com

Support for Windows 7 is now history. Support for Windows 8 will last for 3 more years. Windows 8 mostly consisted of intermediate steps (and missteps) toward Windows 10. In 2020



I can think of no reason for any user to be running Windows 8 instead of Windows 10, especially since Windows 10 is superior and is a free update to Windows 8. So, if you are one of the few users still running Windows 8 there is no better time than now to upgrade to Windows 10.

Most of us have used Windows 10 for a few years now; Windows lacks the flexibility of the flavors of Linux, and the slick user interface of Mac's Catalina, but is the operating system installed on the majority of home computers now. Windows 10 is Microsoft's best operating system so far but is not perfect. However, it is virtually infinitely customizable and I'm going to make a few suggestions that will help you get the most out of your windows 10 system.

## Keep Windows Up to Date

Windows is issuing updates on a weekly basis and these are important not only for the

### Windows Update



You're up to date

Last checked: Yesterday, 9:55 PM

Check for updates

Feature update to Windows 10, version 1909

The next version of Windows is available with new features and security improvements. When you're ready for the update, select "Download and install."

[Download and install](#)

operating system and peripheral issues corrected but also for keeping your security malware definitions current. Go to Update Settings and confirm that updates are current. Hit Check for Updates to verify this. This is also where you can learn if your system is running the latest update to Windows 10 (1909) and possibly complete this process (as is required in the dialogue box shown). Under Advanced Settings you can make sure auto-updates is checked.

## Disable Cortana

She needs to just shut up. For most users, Cortana is just an annoyance built into Windows 10. She mostly gives users annoying pop-ups, she is constantly gathering data, and does little more than try to force us into Bing searches. In this day of actually useful voice assistants, such as Google or Alexa, Cortana seems oddly dumb. I have learned to disable Cortana during the installation of Windows but if you have not had this opportunity shutting her off is easy. Go to Cortana under Settings and toggle all sliders off.

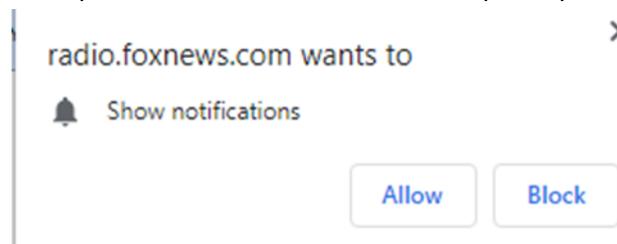
Go back to the main Settings window and under Privacy Settings you can turn off the sliders for speech and inking and typing to reduce the amount of data Cortana gathers on your



computer usage. You can also block Cortana from accessing your microphone and camera on the privacy page. This is also a good time to review all your privacy settings to make sure you are putting as little information as possible out there.

### Disable Notifications

Many users are unaware of why they are constantly getting popups from the Notifications



✕ icon on the lower right-hand corner of your Taskbar. These popups use system resources and can be a pain when they interfere with your computer use. Go to Settings, System, Notifications, and actions and toggle off Notifications. Like magic, they will no longer appear! You will still have many web pages

offering notifications, but you can just say “NO!” by hitting “Block” or “Don’t Allow”.

### Disable Startup Apps

Go to your Task Manager Startup tab and disable any programs you do not need running immediately every time you go into your operating system. Microsoft OneDrive and speech recognition are a couple of major resource hogs. Toggle off anything you do not need running all the time. Remember, you are not removing any programs and you are not preventing them from firing up when you need them.

### Log-in Faster

The Windows 10 log-in screen is an excellent example of a worthless “improvement”.



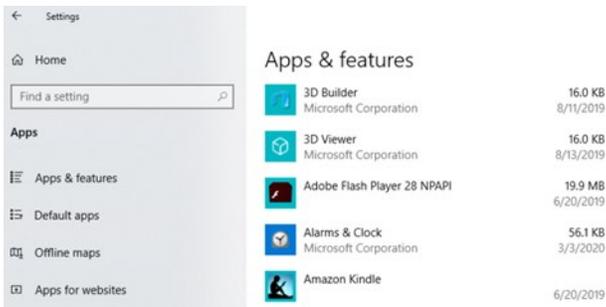
Having to swipe up or down or hit “Space” is a step Microsoft somehow felt was necessary; typing in your password takes even more time. Most users prefer to use a four-digit PIN; just enter 4 digits and there is no need to even hit Enter. To set a PIN go to Settings, then Sign-in options. Click on Windows Hello PIN and set your 4-digit PIN. Note that a little further down on this page you can disable the requirement for a sign-in after you’ve been away from your computer for a while.

If you want to *remove* the sign-in password requirement, type “NETPLWIZ” in the search box then use this application to disable the password requirement for your computer.

## Disable Background Apps

This is not necessary on a new powerful system, but if yours is older you might want to look at these under Privacy/Settings. With an older system performance might be improved by unchecking anything you don't need running.

## Uninstall Unneeded Programs



Talking about unnecessary stuff included with Windows 10, there is a ton of “Bloatware” included on most new store-bought systems you can just ditch. Right-click on Start and click on Apps and Features. Scroll through the list and you will see a lot of programs on your system that you never use. Games such as Candy Crush and security programs such as Norton or MacAfee are major offenders in this area. Here is where you can simply

uninstall the unused applications, freeing up room on your hard drive, and ensuring these programs will not try to load and take system resources in the future.



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## Microsoft's New Emoji Keyboard

By Nancy DeMarte, Vice President, The Sarasota Technology User Group, FL

The STUG Monitor, [www.thestug.org](http://www.thestug.org)

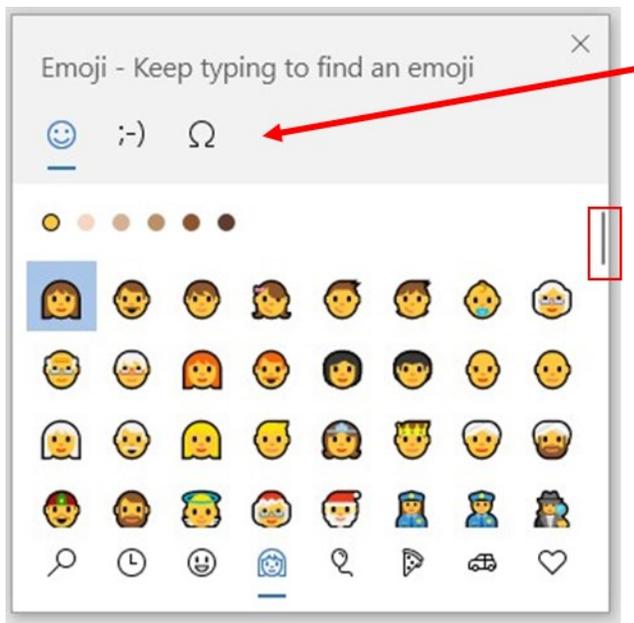
vp1 (at) the stug.org

If you are an Apple user, you probably know about emojis. These little head icons express moods by the looks on their faces. They can be part of emails or text messages or any place where text can be typed. The emoji collection on my iPhone has over 100 faces, each with a recognizable facial expression, but the gallery goes way beyond faces. You can send emoji animals, objects, groups of people, plants and flowers, phases of the moon, food and drinks, sports, and many more.

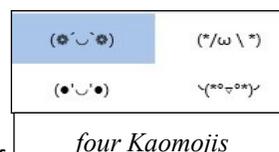
The emoji was created by the Japanese. The term was formed from the combination of the Japanese words for “picture” and “character”. In Western countries, Emoji was originally called Pictograph. Emojis became so popular that a reference site, [Emojipedia.org](http://Emojipedia.org), was created in 2013. It is a search engine for emojis and is worth a visit. Emojis can be used in all the big social media sites like Facebook, Twitter, and YouTube, as well as email programs and other Internet places where you can type.

Microsoft has included a traditional on-screen keyboard (OSK) without emojis since the debut of Windows 7. Perhaps noticing the popularity of emojis, Microsoft created its own gallery of emojis and put them in an emoji on-screen keyboard. This keyboard was one of the feature updates Microsoft included with the Windows 10's Fall 2017 Creator Update. It was improved in April 2018 and is now featured among the Ease of Access group of tools in Settings.

To use this keyboard, you are encouraged to enable it, but if you are current with Windows updates, you may be able to skip these steps. The enabling steps begin by clicking the Start button> Settings> Ease of Access. Then scroll down to Keyboard and drag the Off dot to the right under the heading, “Use your device without a physical keyboard.” Today, most users can easily open the emoji keyboard on their screens by pressing the Windows key while clicking the period or semi-colon key. This works for touch screens, too.

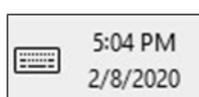


The keyboard contains three major categories along the top: Emoji, Kaomoji, and Symbols. The Emoji category includes the smiley faces and other objects like those seen in Apple products. Kaomoji includes facial expressions made of punctuation marks and other odd lines, some of which are Japanese. The Symbols category includes Latin symbols, international currency, the copyright mark, and others. Each category can be scrolled down for more choices.



Below are a few tips for using the Windows emoji keyboard:

1. To open the keyboard, click or touch the Windows key and the period or semi-colon.
2. Drag the emoji keyboard anywhere within the window.
3. To close the keyboard, click the X or the ESC key.
4. The magnifying glass symbol is a search engine for emojis.
5. The clock with hands set at 3:00 shows the most recently used emojis.
6. Emoji categories are pictured across the bottom of the keyboard.
7. There is a scroll bar on the Emoji keyboard, but it isn't obvious. It is a short, thin vertical line on the right edge of the keyboard. See the red box around the scroll line in the illustration. Move your mouse over the line to enlarge the scrollbar and scroll for more emojis.



You can pin the emoji keyboard to the taskbar to make it larger and easier to see. First, right-click the taskbar and left-click the “Show touch keyboard” button. That will add a small keyboard next to the time and date at the right end of the taskbar, as shown. Click this keyboard to open the traditional on-screen keyboard which now includes the emoji icon. (Shown below) Click the face and scroll horizontally to see large versions of all the emojis for each category. (It too is a fine horizontal line below the emojis.)

Then try out a few emojis on friends. They usually bring a smile.



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## Modern Television Technology

By Jeff Wilkinson, President, Sun City Summerlin Computer Club, NV  
February 2020 issue, Gigabyte Gazette, [www.scsccl.com](http://www.scsccl.com)  
[pres.scsccl \(at\) gmail.com](mailto:pres.scsccl@gmail.com)

After a recent class on “Getting the Most From Your Roku” and in preparation for a March General Meeting update on “Cutting the Cord” I reflected on how different television viewing is today. Growing up in San Francisco my family had just a few choices for television viewing, all over the air, and received with an antenna either mounted on the roof or rabbit ears that sat on top of the huge console. I’m sure we all remember the gyrations we went through when using rabbit ears in an attempt to receive a stable snow and ghost-free picture! And, of course, the drudgery of walking over to the TV to manually change the channel.

How times have changed, now we change channels from our favorite viewing spot and control source, volume, channel, and even record our favorite shows!

Today, we watch TV on smartphones, tablets, computers, and television sets in various resolutions. We stream to TVs using different devices like Roku, Fire TV Stick, and Android boxes and we do it in a multitude of formats.

Many years and millions of dollars have been spent to build a streaming infrastructure capable of on-demand and live streaming to a myriad of different devices and configurations. The internet wasn’t set up to do this – top quality video in such a large scale according to said streaming media consultant and expert [Dan Rayburn](#). Streaming isn’t a static medium like TV, and our on-demand consumption pattern requires video to travel through lots of steps as it’s formatted for the final destination device.

If you look at some of the parts of the required process of streaming a live event, it is a complicated and involved process. First, you must capture the event, then convert the file format and maybe add a content protection scheme or ad insertion for on-demand revenue models and, finally, formatting for delivery through the internet to a multitude of devices.

According to Mr. Rayburn, it's a lot more complicated. There's no standard for encoding, so video files need to be "wrapped" differently for every platform they're delivered to; files are wrapped differently for [Roku](#) than they are for a desktop browser, a smart TV, or an Android or iOS device. A single video file could be wrapped 20 times or more depending on the devices to which it's being delivered. Enjoying video on a powerful computational device such as an Xbox or PlayStation is different than streaming to a device with less memory and computational power such as a Fire Stick. The size of the video file segments must be adjusted as well as the metadata payload. And we have begun to take for granted that the video we desire will be available in 720, 1080p, or even 4K quickly and reliably when and where we want it. Video streaming is a whole new frontier to be developed and as the deployment of streaming options continually expands, so must the technology and computing power needed to reliably deliver it.

Just a little background as to what is involved in streaming content as we all anxiously look for ways to improve our television viewing experience. 

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# Special Interest Groups (SIGs)

w Work phone   h Home phone   c Cell phone  
\* Meets at an alternate location

Most SIGs will meet at Edina Executive Plaza, Conference Room #102, 5200 Willson Road, Edina, MN

Confirm with a SIG group if they meet elsewhere.  
For more info contact the SIG Leader(s) listed here.

Get SIG announcements!  
Link from [www.tpc.com](http://www.tpc.com)

## Board of Directors\*

All members are welcome! Check [www.tpc.com](http://www.tpc.com) for location.

Selected Saturday mornings

## Linux on Saturday

This is for the Linux newbie and those trying to come over from Microsoft to a different operating system.

Second Saturday @ 9 AM-Noon

Note: No Meetings June-August

Jack Ungerleider      612/418-3494 c  
jack@jacku.com

## Tech Topics

Technical presentation/discussion on various technical topics from the following areas:

- Web/Internet
- Mobile Devices and Apps
- Playing with Programming
- DIY (3D Printing, R-Pi, other hobby electronics, etc.)

Second Tuesday @ 6:00-7:00 PM

Every month

Right before the general meeting.

Jack Ungerleider      612/418-3494 c  
jack@jacku.com

## Microsoft Access

All levels. Presentations by expert developers within the group and by MS reps.

Third Saturday 9:00 AM—Noon

Note: No Meetings June-August

Steve Kuhlmeier      952/934-8492  
skuhlmeier@hotmail.com

## Microsoft Office

Addresses the use, integration, and nuances of the Microsoft Office applications.

Combined with Systems on Saturday

Third Saturday of the Month

9:00 AM—Noon

Note: No Meetings June-August

Steve Kuhlmeier      952/934-8492  
skuhlmeier@hotmail.com

## Directions to Summit Place for General Meetings:

Proceed to Eden Prairie Center Flying Cloud Drive . [Flying Cloud Drive runs along the West side of the Eden Prairie Center.] Once you have driven past Eden Prairie Center (on the left) along Flying Cloud Drive you will come to a stop light at Prairie Center Drive. The next intersection with a stop light and left turn lane is Fountain Place. Turn left at Fountain Place and go straight into the parking lot. Turn left again to the first covered entry way of Summit Place. There is plenty of parking in the large parking lot in front of the first Summit Place covered entry way. When you enter the door at the first covered entry way, ask to be directed to the Performance Room for the TC/PC meeting. For a map of more detailed directions and *info on Web SIG and Board meeting*, check the TC/PC website.

Directions to **Edina Executive Plaza** for **Systems on Saturday, Access, Word and Picture Perfect SIGs**: Take Highway 100 to the 50th Street/Vernon exit. [If you have come from the north, cross back over Highway 100 to the east side.] Take the first right and go past Perkins [The golf course will be on your left.] and continue on the east frontage road (Willson Road) to the next building—5200 . There is ample parking in the building's lot. Conference Room #102 is on 1st floor.

Help yourself by helping others!

Join the team & share your knowledge with others.

Contact TC/PC at [www.tpc.com](http://www.tpc.com)

Meetings start at 7:00 PM (9:00 AM on Saturday) unless otherwise noted. \*Virtual Meetings during Covid pandemic.

**August**

**September**

SUN	MON	TUES	WED	THU	FRI	SAT
						1
2	3	4	5	6	7	8
9	10	11 General Mtg Video  6pm Tech Topics	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31	1	2	3	4	5
6	7	8	9	10	11	12 9am-Noon Linux on Sat- urdays
13	14	15 General Mtg TBA  6pm Tech Topics	16	17	18	19 9am-Noon Microsoft Of- fice (including Access)
20	21	22	23	24	25	26
27	28	29	30			

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As a member of TC/PC, the Twin Cities Personal Computer Group, one of the benefits is reading this monthly publication at [www.tcpc.com](http://www.tcpc.com).

As a member of TC/PC, you may attend any or all of the monthly Special Interest Group (SIG) meetings and be eligible for software drawings. The small membership fee also includes access to real-live people with answers via our helplines, discounts, and various other perks.

Does membership in this group sound like a good way to increase your computer knowledge?

It's easy to do! Simply fill in the form below and mail it to the address shown.  
(If you use the form in this issue, you will receive an extra month for joining now.)



8/20

### Here's the info for my TC/PC Membership:

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City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Home  Business  Change address:  Perm.  Temp. 'til \_\_\_\_\_

Home phone \_\_\_\_\_ Work phone \_\_\_\_\_

Online address(es) \_\_\_\_\_

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**341 County Rd C2 W**

**Roseville, MN 55113**

<http://www.tcpc.com>

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#### I'm interested in:

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**August 11, 2020**

**General Meeting  
Webcam Alternatives**

**Presenter: Curt Trout**

**Via Zoom**

**More info: [www.tcpc.com](http://www.tcpc.com)**



341 County Rd C2 W  
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