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The Digital Viking



Twin Cities

PC USER GROUP

NEWSLETTER

Minneapolis & St. Paul, Minnesota USA • Vol. 42 No.9 • Apr. 2022

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

April 2022

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General Meeting
Tuesday, April 12, 2022
7:00 PM

**A Hearing Revolution
with Healthable Devices**

APCUG Webinar

&

Headless Raspberry Pi Update
from Curt Trout

Via Zoom Only

The vast majority of us will need a hearing aid at some point or will certainly know someone who does. Audiologist Rachele M. Orsini from Starkey Labs (headquartered in Eden Prairie) presents the health implications of hearing loss and the latest advances in hearing aid technology in this webinar.

As a double-feature, Curt Trout will update us on new information on the Headless Raspberry Pi and Pi Hole which he gave a presentation on last month.

Lots of good information to learn. Don't miss it! 📺

Note: All TC/PC Meetings and SIG Groups will be virtual until further notice. Visit tcpc.com for info.

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

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24-Hour Information • www.tcpc.com

Application form inside back cover

The Digital Viking

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

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

Visit www.tpc.com for meeting details.

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(only a nominal cost for each
additional 5 mailed)

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Editor Sharon Walbran

A Common Computer Problem and How to Fix It

By Mark Presky, Director, Los Angeles Computer Society

User Friendly, January 2022 issue

<https://www.lacspc.org/>, leahjc (at) sbcglobal.net

Over the years, computer hard drives have gotten larger and larger. But programs and the other files we load onto our computers have also gotten larger and more numerous. Eventually, this often becomes a problem when one's computer starts running slower or informs you that it just cannot hold anymore.

One way to deal with this problem is to free up space on the hard drive or SSD (solid-state drive). Use the built-in Disk Cleanup tool in Windows 10. Click on the Start menu. Choose All Programs—select Accessories, then System Tools. Click on Disk Cleanup. Under the Files to delete heading, choose which file types you want to remove. If you're unsure which file types to get rid of, select each one in turn and read its description. When you've selected the file types to delete, click OK.

Another method to free up space is to manually go through your files and delete the many of them that you don't need or want. Image (photos), audio (music), and video (audio and image) files can take up vast amounts of file space. How many photos of little Tommy or Grandma from your last birthday celebration do you need? I'll bet you have many duplicates of virtually every shot. Delete the copies, at the least. Have music files on your computer that you never listen to? Again, delete 'em. Now repeat this process with your vacation photos. Lots of old photos of your ex? Remember that song from the movie "South Pacific?" Wash those files right out of your computer.

Another trick here is to reduce the file size of those photos. Most cameras produced in the last several years take photos over two megabytes (MB) in size. Unless you plan to print those large file-size photos, you might think about reducing each image to between 200 and 400 kilobytes (KB). The reduced file size photos won't look any different when you view them on your computer. One can even reduce the photo file sizes en masse. If taken on your iPhone, the phone will ask you what size you want the file to be when you send them, via email, to your computer. I use IrfanView, but several other programs do this.

Going through those extra, unneeded files can be laborious and time-consuming, but that might beat having to buy another computer, having a larger hard drive installed and having all the files transferred, or having your computer crash.



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The AX6 Wireless Router

David Kretchmar, Hardware Technician, Sun City Summerlin Computer Club

<https://www.sccc.club>

dkretch (at) gmail.com

Could a new wireless router featuring the latest 802.11AX (Wi-Fi 6) protocol solve internet connection issues in your home?

My old wireless router was a Linksys EA7500 Dual-Band Wi-Fi Router (AC), which supported up to 15 wireless devices. The dual-band feature, almost universal on routers today, supports



2.4GHz or 5GHz. So theoretically, you could take the maximum speeds of a band and then divide it by the number of devices on that band to determine the bandwidth available for each device.

The Linksys EA7500 router is an adequate router for its AC (Wi-Fi 5) class, with a total speed of 1.9Ghz and other specs that far exceeded the broadband I was getting from Cox. It sells today on Amazon for \$150.

That might sound like plenty of capacity, but wireless routers never reach their advertised maximum speeds. Real-world speeds are much slower and can vary throughout the day. A speed of around 5Mbps per device is sufficient for most purposes, but if the speed to a device is dropping too low single-digit Mbps, that could cause problems. The 5GHz band is generally faster but has a shorter range, making it work best for devices close to the router.

There are 11 channels on the 2.4GHz band; however, many overlap. The “clean” channels – 1, 6, and 11 – are the most popular Wi-Fi connections. A router will automatically pick a channel to use when set up. The problem is that the more popular channels are also subjected to more radio interference from everyday appliances such as microwave ovens and other technology, which means they can struggle to deal with many connected devices. In addition, most “smart” home devices use 2.4GHz channels, which can further clog things. You can often ease the load by switching to another channel (1, 6, or 11).

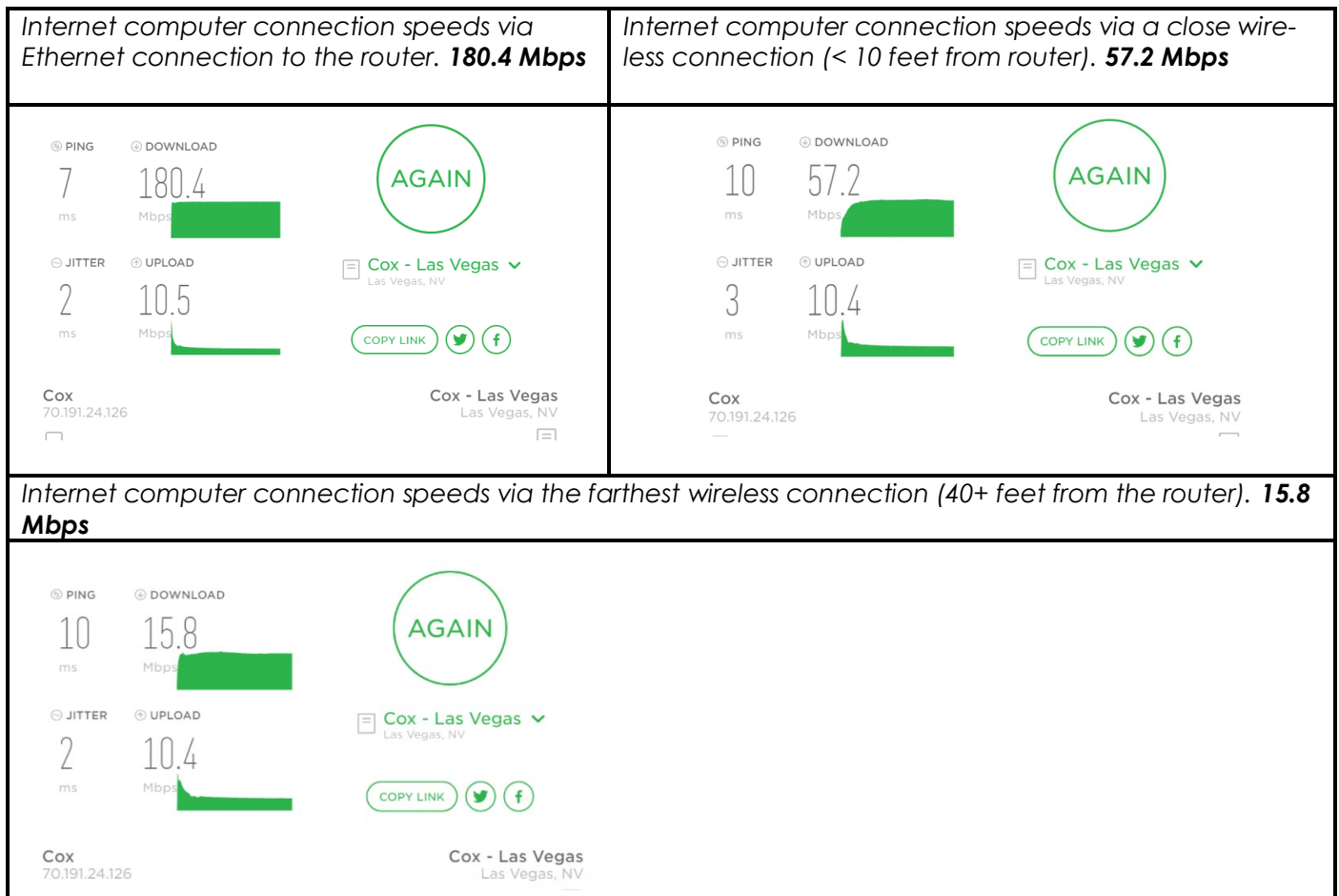
Too many devices

When I installed the Linksys router shortly after its release in 2016, the maximum 15 supported devices provided plenty of headroom, yet in 2021, that no-longer state-of-the-art home router seemed less than adequate. I was experiencing slow down and connection issues on my wireless devices. A quick audit of my wireless devices showed that the router was

supporting a Ring doorbell, a printer, a tablet, two smartphones, two Alexas, three security cameras, three smart TVs, and up to four wireless computers. If you are counting, as many as 17 devices are supported by one router! Of course, all 17 devices would never be making demands on the router simultaneously, but the number of potential clients could produce enough traffic to overwhelm my router.

Speed Tests

I set out to determine the source of my troubles. First, I tested 2.4GHz wireless speeds in my home using free PCMatric software. My ISP is Cox Internet Preferred 150, nominally 150Mbps.



So, I was receiving a fast internet connection, 180Mbps, yet this seemed to be too rapidly dissipating in my home, especially at a distance from the router.

The two devices in my home connecting me to the internet are the modem and the router. If you have cable internet broadband from a provider that uses coaxial cables to deliver bandwidth, like Cox, you have a DOCSIS modem or modem/router combo. There are two DOCSIS standards, 3.0 and 3.1. The most significant difference between DOCSIS 3.0 and 3.1 is that 3.1 can support download speeds ten times faster than DOCSIS 3.0, up to 10Gbps.

A new modem?

My modem, a 6-year-old DOCSIS 3.0 unit, was my first suspect since I was aware that DOCSIS 3.1 was the newest standard for modems. But my internet plan comes with top speeds of less than 200Mbps. If you rent your modem or modem/router combo from Cox, and your plan provides less than 200Mbps, the modem included with your equipment is likely a DOCSIS 3.0 model, which is adequate for supporting most home internet connections. I learned I would probably see little or no performance improvement by using a DOCSIS 3.1 device over a DOCSIS 3.0. And considering the price difference, replacing the 3.0 with a 3.1 would probably be a waste of money.

A new router?



The logical solution seemed to be to try a new router. More specifically, a router with Wi-Fi 6 capabilities (which should help in the future as more mobile devices become compatible with the latest standard) and routers that can switch between bands automatically. This means that Wi-Fi 6 routers detect when specific devices use a lot of bandwidth and slow everything down, then move them to the 5GHz band or back to help manage speeds. It's a great feature that self-manages the problem.

The new Netgear Nighthawk AX6 router

Costco had a great special on the highly-rated Nighthawk AX6 wireless router, so that seemed like a logical option. The new router was pretty easy to install, and the improvement was dramatic. Download speeds more than doubled at my most remote wireless device and almost tripled at my closest wireless device. But, as might be expected, the download speed of my Ethernet-connected computer was unchanged.

The only issue was that an older network adapter on one laptop required a driver update to recognize the AX6 signal. And it is a hassle to reset some networked devices, such as Ring.

If you have connection issues and your router is a few years old, consider upgrading to the newest protocol, an AX6 router.



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Hackers, Thieves, and Creeps

The Bad Guys Are Working Hard to Get Your Money

By Kurt Jefferson, Editor, Central Kentucky Computer Society

<https://ckcs.org/>

lxtown2 (at) gmail.com

If Cher ever decides to rework her major 1971 hit single, *Gypsies, Tramps, and Thieves*, she may want to rename it, *Hackers, Thieves, and Creeps* to reflect today's ongoing Internet security battles.

Hackers are infiltrating email accounts and tricking folks into paying their hard-earned money for all kinds of bogus ventures.

A few examples of recent emails and Internet threats:

You owe \$280 now to update that anti-virus software package (*that you never even purchased.*)

We've taken control of your Windows 10 PC. (*You'll get it back only after you pay our ransom demands.*)

Hey, click on this email link, and it will take you to a bogus website that looks real, seems real, and (*is bogus as a Kentucky snowfall in August.*)

You're using Safari on a Mac, and a box pops up that reads, "Alert! Suspicious Activity Might Have Been Detected. Major Security Issue. To fix it, please call Support for Apple +1 888-476-**** (Toll-Free) immediately!" (Pop-ups such as this one are not legitimate. Apple doesn't notify anyone of a "major security issue" in this manner. *Bogus to the max.*)

When it comes to security breaches, "**Unfortunately, most people do not understand the gravity of the problem until it personally affects** them through identity theft or other malicious activity. Unsurprisingly, however, the rate of identity-related crime is exploding, and a recent study claims that there is a new victim of identity theft every 2 seconds in the United States alone," writes the security website, selfkey.org.

The Internet Theft Resource Center keeps track of the attempts to dig deep into your wallet. Unfortunately, things are not looking up. Reported data breaches grew by 17% from the start of 2021 to September of this year over the number of breaches reported in all of 2020. Yikes.

Security breaches (the ones we hear about) are now so pervasive that we can all view giant lists on the Web detailing the gory details. For example, Upguard lists The 59 Biggest Data Breaches. The fact that dozens of well-known companies appear on this list (Yahoo!, Facebook, T-Mobile, Uber, Home Depot, Zoom) tells us that we're no longer in Kansas (so to speak.)

If you want to see even more names, take a deep breath and check out the selfkey.org list,

which claims to show All Data Breaches in 2019-2021, An Alarming Timeline (These are breaches that have been made public.)

There's even a black-market invitation-only online shop where the bad guys go to buy login credentials, fingerprints to open phones and iPads, and stolen cookies.

In 2017, CBS News reported that "imposters, from fake IRS agents to faux tech support employees, have officially overtaken identity thieves to top the list of consumer fraud complaints..."

Okay. What about solutions? The Federal Trade Commission offers several tips:

Secure Your Internet Devices at Home. This includes your Wi-Fi router, PCs, Macs, Linux machines, iPads, smartphones, smartwatches, smart speakers (Hello, Alexa), home cameras, smart doorbells, and every other device connected to the Internet.

Learn When Your Voice Assistant Is Listening. Alexa, Google Assistant, Siri, Cortana might be listening when you're unaware. The FTC urges you to lock down your login, check your settings, and be aware of what's connected to your voice assistant.

Secure Your Router. As we mentioned earlier in this newsletter, you need to update your router's settings periodically. As the FTC writes, "Think of your router as home base for all your devices. The more secure your router, the more secure your connected devices will be."

Use a VPN. We've talked about this before at a CKCS Tech Night. Find a good, reliable, trustworthy virtual private network and use it on all your Internet-connected devices. A VPN is an app that you install. It sends your Internet signal into a tunnel so others cannot access your data. IPVanish writes, "A VPN Helps You Take Back Your Privacy and Protect You From Hackers."

Avoid free VPNs. In this life, you get what you pay for. **So, make online security a priority.**

Finally, check out: [The Ultimate Internet Security Guide For Seniors \(2021\)](#). Even if you've used the Internet since the '90s, I promise you there is at least one tip on this website to benefit you.

Stay safe, Stay secure, Stay informed. Attend your computer club to learn all you can about Internet security.



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Make a Wi-Fi QR Code Using Android

By John Krout, Presenter and Newsletter Contributor

Potomac Area Technology and Computer Society

www.patacs.org

Instead of forcing family, friends, and user group members to type a long, convoluted password to access Wi-Fi, use your Android phone to make a QR code including the password, enabling all to connect by scanning the QR code.

INTRODUCTION

The primary purpose of QR codes is to convey useful information in a form that a smartphone, tablet, or computer can read. Any situation where info has to be hand-keyed can be improved by offering a QR code containing the same information. Recent Android and Apple phones and tablets models can read and apply the info contained in QR codes.

The second advantage of QR codes is to avoid the hassle of **typos**. Of course, that hassle factor increases as the length of the hand-keyed info increases, making a QR code even more attractive.

QR codes contain various types of data. Some of the data types are URL (web page address), vCard (street address and phone numbers), and email (including recipient email address, subject line, and even the message text).

A **Wi-Fi QR code** typically contains three data elements: the Wi-Fi network name, also known as SSID, the password, and the type of encryption used by the Wi-Fi network. Devices that scan a Wi-Fi QR Code can connect to the Wi-Fi network if it is in range.

In this article, you will learn how to use your smartphone or tablet running the Android 10, 11, or Android 12 operating system to create a Wi-Fi QR code and store it as an image, just like a photo.

You will learn how to test the QR code to make sure it works. Then you can display it, enabling anybody nearby to scan it and connect to the Wi-Fi network, and you can print it, so it can be posted for others to scan even if you are not present at the time.

LOG IN TO THE WIFI NETWORK MANUALLY

Initially, you use your Android device to log into the Wi-Fi network using the usual method, including typing the password manually. However, if you use the Wi-Fi network frequently, your Android device may automatically connect to the network.

At that point, your Android device has all the info required to create a QR code. It has the network name, the password, and the network encryption type.

This article was prepared, and screens were captured using Android 12.

GENERATE A WIFI QR CODE

The Settings app that enables you to connect to the Wi-Fi network and type the password can create a Wi-Fi QR code for logging in to the network.

Open the Android 10/11/12 Settings app, and tap **Connections**. You should

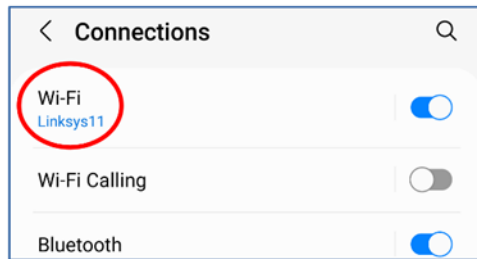


illustration 1

see a screen like that

depicted in **illustration 1**, with the

Wi-Fi network SSID at the top. Tap the SSID, which is circled in the illustration.

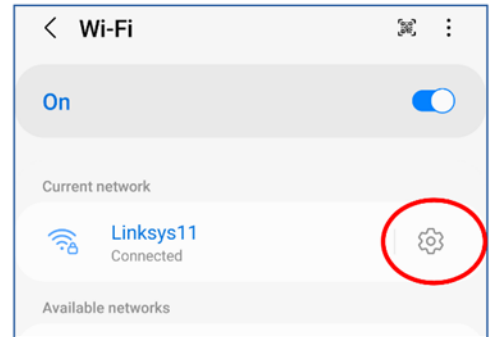


illustration 2

You should see a screen like the one depicted in **illustration 2**. The SSID appears under the heading **Current network**. Tap the **gear icon** to the right of the SSID, which is circled in the illustration.

You should see a screen like the one depicted in **illustration 3**. Then, tap the button labeled QR code at the bottom left, which is circled in the illustration.

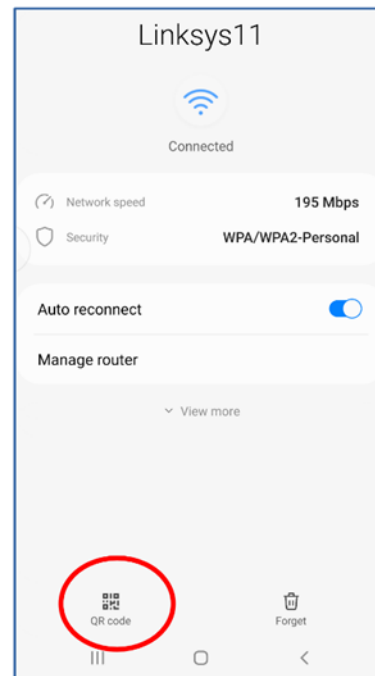


Illustration 3

You should see a generated QR code as in **illustration 4**. I blocked out part of the code for security purposes; anyone could log into the network with the entire QR code.

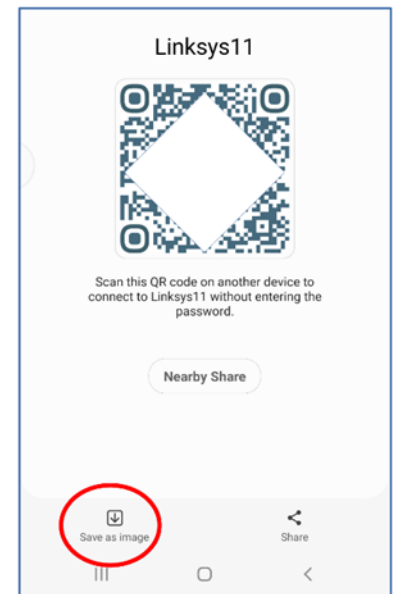


Illustration 4

Tap the button in the lower-left corner, labeled **Save As Image**, to save the QR code image on your device. That button is circled in the illustration.

On my device, within the DCIM folder, the QR code was saved in the internal storage folder named **Pictures**.

TEST THE WIFI QR CODE

Before you make the Wi-Fi QR code available to anyone else, it is a good idea to test the QR code.

The test consists of these steps:

1. Get in range of the Wi-Fi network.
2. Force the Android device to Forget the Wi-Fi network
3. Scan the Wi-Fi QR Code image stored on the device.

HOW TO FORGET THE WIFI NETWORK

For an Android 11/12 device, the sequence of taps to Forget the current Wi-Fi network is: **Settings**→**Connections**→**Wi-Fi**→**SSID Gear icon**→**Forget** (trash button in the lower right corner in illustration 3). There is no request from the phone to confirm that you really want the device to Forget. Instead, it immediately deletes its record for the current Wi-Fi network.

HOW TO TEST THE WIFI QR CODE IMAGE FILE

Then tell your Android device to scan the same QR code saved in the device.

Pull down the Shade menu from the top of the Android screen.

On my Android phone, the Shade menu pulls down halfway. A second downward swipe pulls it down, revealing the Scan QR code button circled in **illustration 5**. Tap that button.

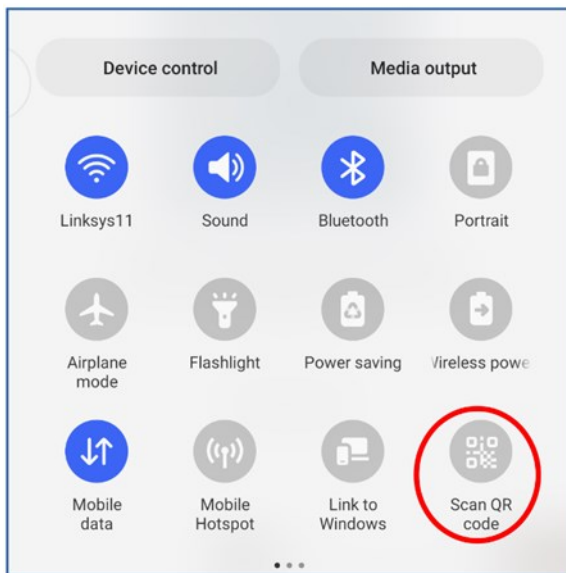


Illustration 5

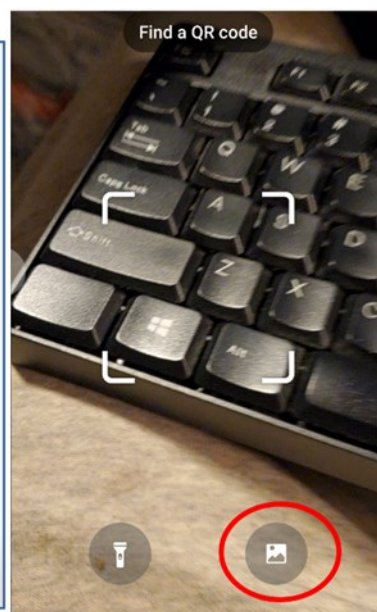


Illustration 6

A camera window opens, displaying the legend Find A QR Code, as shown in **illustration 6**. That screen includes a button to scan a photo file instead of a displayed or printed QR code. That button is circled in the illustration. Tap that button.

A screen appears showing photos. At the bottom left of the screen, there is a **Pictures button**. Tap the Pictures button. When photos in the Pictures folder appear, find and select the stored Wi-Fi QR code image.

In my case, after scanning the selected Wi-Fi QR code image in Screenshots, the Settings app connected to the Wi-Fi Network immediately. I confirmed that by switching to the Settings app and checking for a secured Wi-Fi network.

OLDER VERSIONS OF THE ANDROID OS

I tested it using my Samsung Galaxy S10 smartphone running Android 12.

The Settings app on my Galaxy Tab S5 lite running Android 11 displays the same user interfaces in a column instead of displaying an entire screen, but the steps for creating a Wi-Fi QR code and testing it are identical.

Google informs me that the Wi-Fi QR code creation capability was introduced in Android 10, and the ability to scan a QR code was introduced in Android 8.

Older versions of the Android OS can install a free app such as **QRbot** that will scan QR codes and make appropriate use of the info provided by the QR code, such as logging into a Wi-Fi network. **Illustration 7** shows the icon of the QRbot app.



Illustration 7



Illustration 8

Although the QRbot app can make Wi-Fi QR codes, those codes lack a mandatory data element included by the Android 12 Settings app. As a result, Wi-Fi QR codes produced by QRbot will not work on most consumer-grade Wi-Fi routers.

ABOUT THE AUTHOR: John Krout is a retired software engineer living in Arlington, Virginia. He helped design, code, test, and document software for many federal agencies during his career, mainly in C and C++. He has been writing about creative uses of computers since the early 1980s. Now he also writes about smartphones, tablets, and digital cameras.



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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.tcpc.com

Board of Directors*

All members are welcome! Check www.tcpc.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 Accord, 1515 Energy Park Drive for General Meetings:
From I-94 in St. Paul, take the Snelling Avenue exit, then go north on Snelling Avenue about one mile to Energy Park Drive. Take Energy Park Drive and take the first left into the driveway to 1515 Energy Park Drive.
From I-694 or Hwy 36 in St. Paul, take the Snelling Avenue exit, then go south on Snelling Avenue past Como Avenue to Energy Park Drive. Take Energy Park Drive and take the first left into the driveway to 1515 Energy Park Drive.

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.tcpc.com

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

April

May

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



You have just read an issue of The Digital Viking.

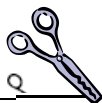
Would you like to receive this delivered directly to your email or business each month?

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.

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.)



4/22

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

Full name _____

Company name _____

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City _____ State _____ Zip _____

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Where did you hear about TC/PC? _____

I DO NOT want any of my information disclosed.

I DO NOT want to receive any mailings

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Roseville, MN 55113

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Training classes Volunteering

Special Interest Groups: New User, Access, etc.

List here:

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March 8, 2022
7:00 pm
General Meeting

**A Hearing Revolution,
with Healthable Devices**

&
Headless Raspberry Pi Update
With Curt Trout

Via Zoom Only



341 County Rd C2 W
Roseville, MN 55113

FIRST CLASS MAIL