PATACS Posts

Newsletter of the Potomac Area Technology and Computer Society

My turn......

I feel like it's been more than a month of *Sundays* since I was last sitting in my office chair.

Since February 18th, we (my wife and I) have been traveling—a lot for us. We were "across the pond" for 3 weeks. We were in Italy for two weeks and then the UK for one.

After being home for exactly one week, we got back on a plane headed west this time, to Ann Arbor, MI, and then further west to the Twin Cities to visit family and friends.

Now we're home—I'll be here until my next trip, in mid-April, to the Midwest, but this time I'll be driving!

PATACs would like to thank the following members for renewing their memberships between December 5, 2022, and March 18, 2023:

Ronald Burek, Barbara Conn, Michael Emery, Roger Fujii, Tom Gutnick, Paul Howard, Roberto Jimenez-Ortiz, Jerry Kirschner, Leti Labell, Martin Menez, Patrick McGinty, Edward Mundy, Norbert Pink, James Rhodes, Bruce Rosen, John Sullivan, Kosmo Tatalias, Charles Throneburg, Tom Urman, and Dolores Vestrich.

Next printed issue: May 2023.

Contents

Thank this issue's **proofreaders**: Doris Bloch, Barry DeMaio, Paul Howard, Nick Wenri

Make a Wi-Fi QR Code Using Android
By John Krout
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 basic 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 info. Recent Android and Apple phones and tablet models can read and apply the info contained in QR codes.

The second advantage of QR codes is to avoid the hassle of typos. That hassle factor increases as the length of the 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 (Service Set Identifier), 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 11 or later 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 Wi-Fi Network Manually

Initially, you use your Android device to log into the Wi-Fi network using the usual method, including typing the password manually.

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 **Settings** app, and tap **Connections**. You should see a screen like that in
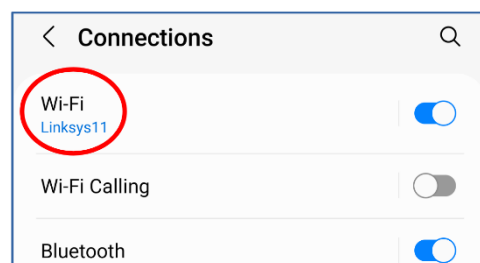
Illustration 1

Illustration 1, with the Wi-Fi network SSID at the top. Tap the SSID, which is circled in **Illustration 1**.
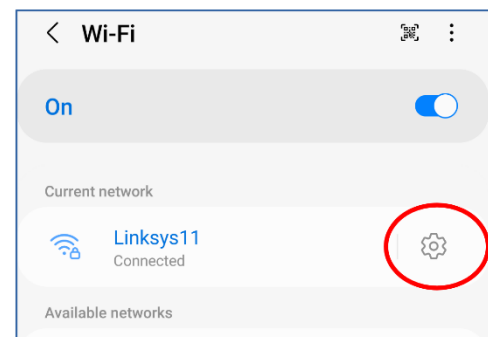
Illustration 2

You should see a screen like the one depicted in **Illustration 2** (previous page). The SSID appears under the heading **Current network**. Tap the **gear icon** to the right of the SSID, which is circled in **Illustration 2**.
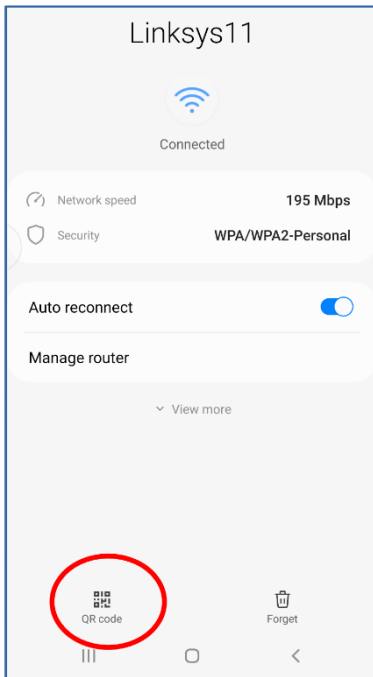
You should see a screen like the one depicted in **Illustration 3** (left). Tap the button labeled **QR code** at the bottom left, which is circled in the illustration.

You should see a generated QR code as in **Illustration 4** (right). (Some of the QR code is blocked for security purposes.)
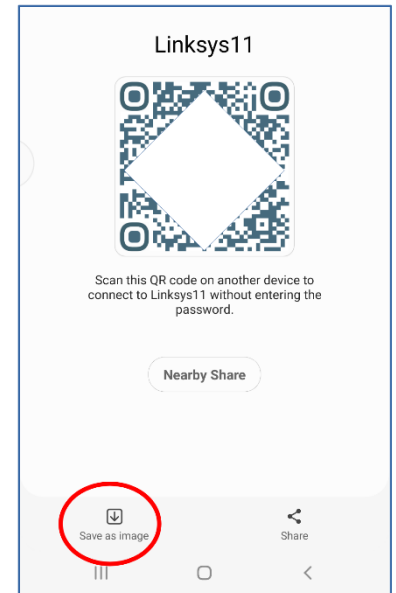
Illustration 3

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 (above right).

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

Test The Wifi Qr Code

Before making the Wi-Fi QR code available to anyone else, testing it is a good idea.

The test consists of two steps:

1. Force the Android device to **forget the Wi-Fi network**

2. Scan the Wi-Fi QR Code image stored on the device.

How To Forget The Wifi Network

For an Android device, the sequence of taps to **Forget** the current Wi-Fi network is: **Settings→Connections→Wi-Fi→SSID→Gear icon→Forget** (trash can 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. It immediately deletes its record for the current Wi-Fi network.
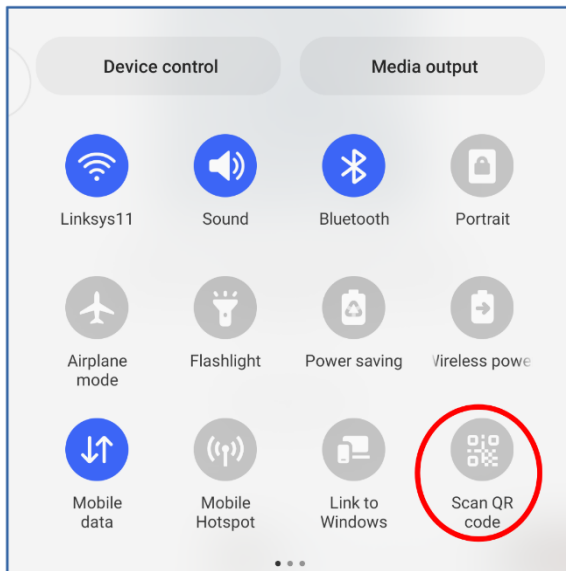
How To Test The Wifi Qr Code Image File

Illustration 5

Illustration 6

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.

A camera window opens and displays 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, with subfolders listed in the left pane. Navigate to the **Screenshots** folder, and select the stored **Wi-Fi QR code.**

In my case, after scanning the selected Wi-Fi QR code image into **Screenshots**, the **Settings** app immediately connected to the Wi-Fi Network. I confirmed that by switching to the Settings app and checking for a secured Wi-Fi network.
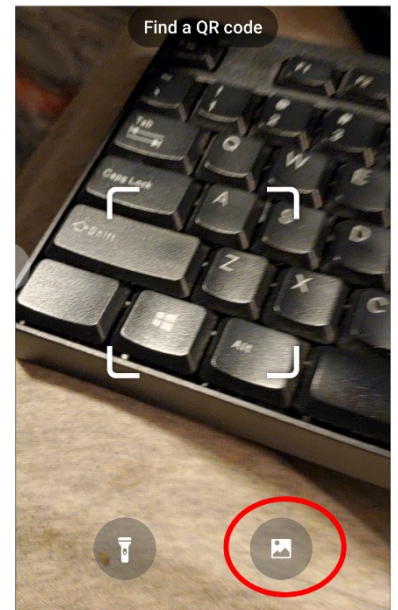
Older Versions Of The Android OS

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 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.

Users of 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

###

Waymo Self-Driving Cars
by Jeff Wilkinson,
President, Sun City Summerlin Computer Club
https://www.scscc.club   president.scscc@gmail.com

On a recent visit to San Francisco, we noticed Waymo cars on many downtown streets. At first, we thought it was part of Google Maps since Waymo is an Alphabet company (Ed.'s note: as is Google). But after seeing multiple Waymo cars together, we, you guessed it, Googled it and found out it was a ridesharing service.

The Waymo taxi service began in Phoenix shortly after mapping the greater Phoenix area was completed in October 2020. This driverless service was previously available only to research testers and onboard safety drivers. Now, it serves a 50-square-mile area in the Phoenix suburbs of Chandler, Tempe, and Mesa. With a huge investment at stake, the challenge is reducing the human interaction required to safely perform the service.

At this time, Waymo in San Francisco is in Beta testing, initially offering free rides to select passengers in San Francisco via its [Trusted Tester](#) program. Waymo's fleet includes Toyota Priuses and hybrid Chrysler Pacificas, but, Waymo has partnered with **Jaguar** to deliver the world's first fully self-driven premium EV experience. We saw only those vehicles in San Francisco.

Because San Francisco's terrain is hilly, with dense streets and multiple obstacles from continuous construction activity, Waymo cars will have a safety driver on board. The team has been mapping the city since 2019, and the cars contain five LiDAR (Light Detecting and Ranging) units and one surround-view camera on top of each vehicle. The LiDAR provides a detailed, 3D map of the car's surroundings. It gives shape and depth to the objects, roads, buildings, and more—the data from these sensors are fed to a computer running Google's machine learning algorithm.

The human body has five senses: hearing, sight, smell, taste, and touch. We use these senses to navigate the world we live in. Some of these senses are detected with man-made sensors in self-driving cars. Cameras for sight, take multiple photos to be compared with known objects. Cameras are used with object detection algorithms to classify all the things the car sees into usable input for the algorithm. The cameras are also placed for a 360-degree view and are adapted for identification in various light and climate conditions. Once the camera has gathered the data, an object detection algorithm, which involves computer vision and neural networks, is used to classify the objects into labels like pedestrians, cars, signs, and more.

LiDAR is used to simulate the touching sense and provide range and distance information. The camera can rotate at hundreds of revolutions per minute and provide a 360-degree view and high-resolution information range. The vertical angle of detection allowing height measurement and the updating frequency are other important features. In addition, multiple channels with input from different laser beams provide higher-quality data to the object detection algorithm.

The Waymo driver processes the local information it has gathered, along with its over 20 million miles previously driven in the real world, to predict where other objects (like pedestrians, cars, etc.) would go, how fast they would move, and the way they move.


The Waymo processor predicts *all* the possible paths each object may take in less than a second; with constant updates and corrections as the trip begins.

In addition to considerations of safety and navigation, self-driving vehicles must be power-and-fuel-efficient. Therefore, numerous sensors, actuators, application-specific circuit boards, and subsystems are installed in self-driven cars to manage system-level operations, power consumption, and fuel efficiency.

The voltage in the vehicle battery is crucial for the safety of the users and the vehicle's functionality and is constantly monitored. Autonomous cars use milliohm meters and shunts feeding differential amplifiers to precisely measure the battery voltage drop.

Actuators, step motors, and solenoid valves in the electronic fuel injection system help improve fuel efficiency and reduce emissions and are also actively monitored and controlled.
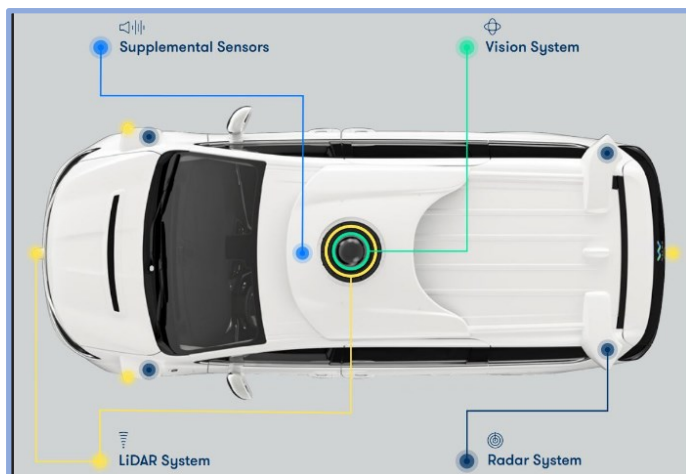
Self-driving vehicles depend on these sensors, actuators, and processors to make crucial decisions on the road, ensuring the safety and comfort of their passengers.

Therefore, these self-driving Waymo Jaguars with the odd-looking spinning lidar and cameras are rolling technology hubs with dynamic

inputs feeding various actuators and solenoids, which are constantly being updated by feedback from even more sensors!!

Initial tests yielded less than stellar feedback, but progress is steadily being made, which is not surprising given the complexity of the project!!
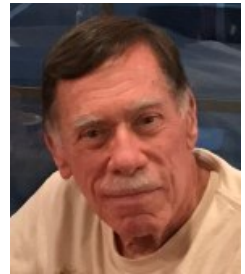
###

Buying a New Computer

By David Kretchmar, Hardware Technician
Sun City Summerlin Computer Club
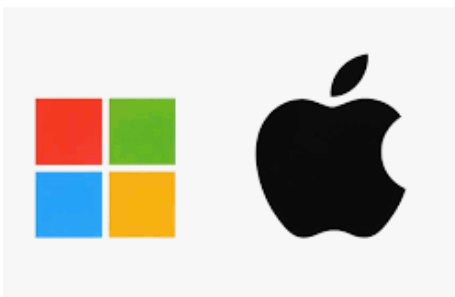https://www.scscc.club   dkretch@gmail.com

From time to time, every computer specialist is asked, "What computer should I buy?" The answer is usually, "What do you intend to do with it, and how much can you afford?" This article addresses the major decisions required if you are buying a new computer.

Apple or PC?

Either one will do what you want, which is probably doing things on the internet.

Both systems will run popular software, such as Office or Photoshop.

It can simplify your life if you stick to one device operating system. For instance, an iPhone might be a good choice if you have a Mac computer or an iPad. On the other hand, if you have a PC running a Windows operating system, then an Android phone will be the most compatible.

I use an iPhone and a PC together and have not had issues. I mostly transfer photos between my devices, usually using email, which allows me to transfer 8 – 10 photos at a time. For mass transfers of photos, I use the Apple USB charger cable to connect my iPhone to my PC.

If you plan to do any action gaming, most games are at least initially written for a PC running Windows.

It's likely any PC you buy today will come with Windows 11, the latest manifestation of the Windows long-running operating system. A few vendors might still be selling old stock of Windows 10 computers, but it is a free and easy upgrade to Windows 11 if you meet the hardware requirements. Windows 11 is very similar to Windows 10; most users will notice that it now appears more like an Apple interface, and Windows 11 is more closely integrated with Microsoft's OneDrive.

Apple Macs are generally a little to a lot more expensive than comparable PCs. Still, they're less susceptible to viruses and other malware, mainly because 75% of all computers are running Windows, making them a potentially more profitable target for hackers. The latest macOS version is 13.2 (Ventura), released in January 2023.

Desktop or Laptop?

Desktops, aka tower computers, generally offer more performance for the same money as laptop or notebook computers and are easier and cheaper to repair or upgrade. However, desktop computers' price/performance advantage is not nearly as dramatic today as in the past, as computer designers and manufacturers devote more resources to miniaturizing components. In addition, desktops provide a more ergonomically correct working position, allowing you to use a larger screen, and usually have better sound.

All-in-One Desktop

All-in-one desktop computers, also known as AIO systems, combine a computer and monitor into one slick-looking package. These AIO systems have become increasingly popular as people want to eliminate as many parts and wires as possible. However, the major downside of AIOs is that their components are tightly packed in the display, making them difficult to upgrade or repair.

Laptops

Naturally, laptop computers are infinitely more mobile than desktops, since they are smaller and utilize a battery for power rather than requiring a wall socket.

A laptop is a way to go if you plan on using your computer while traveling. Some users combine the best of both worlds by using a desktop system at home and taking a tablet-style computer, such as an iPad or Kindle Fire, on the road.


Another laptop option is using a "docking station" in your home. You can easily attach a full-sized monitor, keyboard, mouse, and even speakers to a laptop to gain the ergonomic advantages of a desktop.

No matter what PC format you choose, some component options exist.

The Processor

Apple now manufactures its processors, and its weakest offering is the

equivalent of an Intel core i5 processor. Multiple cores can process more data simultaneously, and most computers today come with multiple-core CPUs.
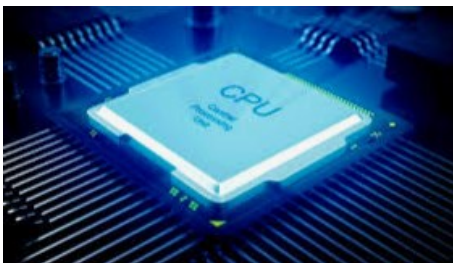
In a PC, you have multiple processors from which to choose. For a system that will perform well today and into the foreseeable future, I recommend Intel's 11th generation Core i5 CPU, an actual six-core processor alternately known as the Rocket Lake series. You will still see manufacturers selling 10th-generation Intel chips, but within your budget, the 11th generation is 20% faster, making it a better value. In recent years the other major manufacturer of CPUs, AMD, has provided an excellent cost-effective alternative to Intel. Still, it appears that Intel has decided to compete in the personal (Ed.'s note: we're not sure what the writer meant by "personal" unless it is "versus work") PC space. The AMD Ryzen 5 2600 or faster Ryzen 5 models, should be comparable to Intel's i5 11th Generation CPUs.

Any processor available today will be sufficient if you're shopping for a budget computer to browse the web, email, and maybe just work on documents.

Memory

Generally, the more memory a computer has, the faster it is, at least when you have multiple windows open. In 2023 16GB has become the standard, with 32GB or more found on more high-performance and future-proof devices.

Hard Drive

Go with an SSD (solid-state) drive. SSDs are a relatively new technology using flash memory that's 4 – 10 times faster than mechanical hard drives; there are no moving parts. As a result, an SSD is the single largest performance boost you can give a computer compared to one with a mechanical hard drive.

Optical Drives (CDs and DVDs)

Optical drives are going away like the ancient 3½-inch floppy disk. Virtually any software support needed is available online, and most users are now streaming music and other entertainment. If you need one, for instance, to install an old program or watch a DVD, you can buy an external USB optical drive that plugs into a USB port for around $25.

Graphics Card

The graphics processing unit (GPU), or graphics card, is the hardware

responsible for producing what appears on the screen. The GPUs can be integrated into the CPU or run on a separate, discrete piece of equipment.

Most computers sold today have integrated graphics, the cheaper, lower-performance option. Integrated graphics are OK for most of what you will be doing but not for things such as action gaming and video editing. On the other hand, photo editing and playing games such as Microsoft Solitaire work fine with integrated graphics.

Conclusions

If you talk to 5 different computer geeks, you can get ten or more opinions on any computer issue, such as those discussed above. I have provided my opinions on things you should consider when buying a new computer system, hopefully, to make this less confusing. Buying a computer will ultimately be based on your needs and your budget.

<div align="center">###</div>

Interesting Internet Finds September 2022
by Steve Costello   scostello@sefcug.com

While going through more than 300 RSS feeds, I often encounter things I think might interest other user group members. The following are some items I found interesting during September 2022.

What To Do If You Forget Your Android Phone's PIN, Pattern, Or Password
https://www.howtogeek.com/226942/what-to-do-if-you-forget-your-android-phone%e2%80%99s-pin-pattern-or-password/
It used to be easy to reset things if you forgot this information. Recently it has become much harder. If you have an Android phone, you need to read this post.

Gmail: Send A Group Email
https://cynmackley.com/2022/09/12/gmail-send-a-group-email/
I know a lot of user group members use Gmail. But, I also know not everyone knows how to send a group email with Gmail. If you don't know how to do this, read this post to learn how.

Streaming DVR Face-Off: YouTube TV, Hulu + Live TV, & The Rest
https://www.techhive.com/article/1072359/streaming-dvr-face-off-youtube-tv-hulu-live-tv-the-rest.html
If you are thinking of cord-cutting and are worried about having a DVR, this is a must-read post for you. There are even options given for antenna-only situations.

How To Create A USB Image To Back Up Your Data
https://www.maketecheasier.com/create-usb-image-data-backup/
This is a little bit more advanced than what I usually post. I use this process frequently enough that it has become a habit.

How To Make Android Faster: 11 Things That Work (And 3 That Don't)
https://www.makeuseof.com/tag/android-faster-works/

I have Android phones and tablets, so this post got my attention. I am always looking for ways to make these devices work faster. I have used most of the tips at one time or another, and I no longer use the 3 that don't work even before reading this.

What near-DC-based publication would be complete in March/April without the requisite cherry blossom photo?

This was taken on the morning of March 27, 2023.

©Henry S. Winokur. Canon EOS R5, Exposure: ½ sec., f/8, ISO 100. Canon RF 24-105 f/4L IS USM) 91mm. The image was taken with the camera on a tripod.

PATACS Information

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First Class

TEMP-RETURN SERVICE REQUESTED

Meeting schedule (Zoom=Online Only, Hybrid=Online/In-person)

1st Wednesday	7:00 – 9 PM	Arlington General Meeting	Hybrid
3rd Monday	7:00 – 9 PM	Board of Directors Meeting	Zoom
3rd Saturday	12:45 – 3:30 PM	Fairfax General Meeting	Hybrid
4th Wednesday	7:00 – 9 PM	Technology & PC Help Desk	Hybrid

Arlington Meet: 5711 S. 4th ST., Arl. VA   Fairfax Meet: 4210 Roberts RD., Fairfax, VA

Meetings are Hybrid or Zoom (as above)
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Online Meeting Access Will Be Sent Via Email

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