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Newsletter of the Potomac Area Technology and Computer Society

July 2024, Volume 5 Page 1

My turn……

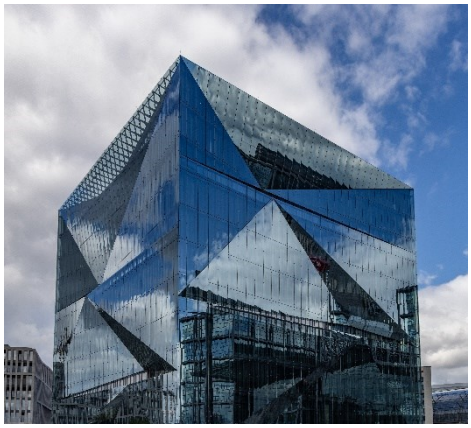
This summer is flying by. It's HOT July already. Doug Kammerer's (NBC4) long-term summer forecast is all-blown to ... well, you know!

Let's see...I'm trying to remember where I was before the last issue...guess I'll have to look it up. My wife and I were just about to leave on a cruise around the Baltic. I can say we had a great time, though I ended up with a probably torn meniscus in my knee, and that caused me a great deal of hobbling, plus being wheel-chaired through four airports: Oslo and London Heathrow (LHR) and then on different days, LHR and Dulles. I can assure you, that if you are a mostly able-bodied person, being wheeled, even though you get to the front of a lot of lines, isn't really fun. I get to try it again in another few weeks... I'm off to Alaska on another photo trip.

I owe member Gary Oddi an apology. He's trying to sell some photo gear and I forgot to include the list in the June issue. I haven't forgotten again, it's below.

Member John Krout has been a prolific contributor to this newsletter. But his article, below, may be the last-of-its-kind. He recently informed me that he's going to be concentrating on Learn-In-Thirty (LiT) sessions for our monthly meetings.

What does that mean? It means we no longer have *any* club-member-written material on an even close to regular basis. That's bad. If you have had any thoughts about writing for this newsletter, now's your chance. It doesn't have to be every issue—just one would help. My only request is that, *if possible* you do it in a Word file type, preferably .doc**x**, or baring that, **.doc.** If you would format it in **Century 12** font and make it **left-justified** that would help me greatly. C'mon folks, I know you have things to comment on and I am sure you can enlighten us with your knowledge.



In front of the main railway station—HauptBahnhof—in Berlin—where my wife and I visited on our Scandinavian cruise in June—is this very cool-looking building called the "3XN Cube". I straightened the image (no converging verticals) using Lightroom Classic.

Exposure info—which I know you're *dying* for 😊:
camera: Canon R5, 1/320th sec, f/8, ISO 100,
lens: Canon RF 24-105 f/4 L IS USM at 24mm.

Next printed issue: September 2024

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Thank this issue's proofreaders: Nick Wenri, Martin Menez, & Henry Winokur; Bruce Rosen provided, once again, table of contents help.

For Sale

Type	Item	Price
Lens	Nikon AF-S DX VR 18-200 F3.5-5.6 G IF-ED	$250
Lens	Nikon ED 80-200 F2.8D AF w/77 UV filter and case in original box w/Lowe Pro Carrying case	$900
Lens	**NEW** Sigma 10-20 F4-5.6 DC EX HSM (Hyper Sonic Motor) for Nikon w/77mm UV filter and case in original box	$300
Lens	**NEW** Sigma 105 F2.8 EX DG HMS Macro OS (Optic Stabilizer) for Nikon with case in original box + lens hood	$350
Lens	Nikon 24mm-120mm f/3.5-5.6D IF AF - in original box	$185
Lens	Nikon 35-135mm Macro f/3.5-4.5 - in original box	$125
Tele-converter	Tamron 2x tele-converter 7MC (for Nikon) - in original box and lens caps	$90
Lens hood	**NEW** Nikon HB-7 lens hood - in original box	$15
Lens hood	**NEW** Nikon HB-11 lens hood - in original box	$15
Tripod Head	**NEW** Bogen Manfrotto Tripod Head 3030 (never used)	$35
Tripod Head	Bogen Manfrotto Grip Action Ball Head 3265 w/Bogen 3292 window mount	$50
KVM	**NEW** IOGear DVI 2-port USB KVM with Audio and Cables- GCS932U	$25
GoPro7	Black with Ulanzi plastic case and GoPro plastic case	$150
GoPro5	Black with Luxebell metal case, GoPro plastic case, filter mount, lens cap	$150
GoPro Remote	Rmmw2 w/charging cable	$50
GoPro Batteries	4 with recharging hub and cable for Hero5	$25
Power Grip	Wasabi Power Hand Grip 5200mAh w/ GoPro mount	$25

ALL IN EXCELLENT CONDITION. Will send pictures of any items.
Contact Gary Oddi, (703) 437-8316 or goddi1@verizon.net

###

A Little Black Box In Zoom Video Screen-Shares

It showed up and blocked part of videos screen-shared during a Zoom meeting. Here is what we have diagnosed so far. (Ed.s note: What "so far" refers to is unknown to me.)

By John Krout, Potomac Area Technology And Computer Society (www.patacs.org)

Introduction

On Saturday, February 17, 2024, the scheduled joint meeting of PATACS and OPCUG was held via Zoom only due to adverse weather closures declared by Fairfax County.

Paul Howard, PATACS President, personally shared the videos displayed during the meeting, including the PATACS pre-meeting slide show. Throughout those videos, unknown to Paul, the lower-right corner was blocked by a black box.

You can see in **illustration 1** a screenshot made during that meeting which includes the

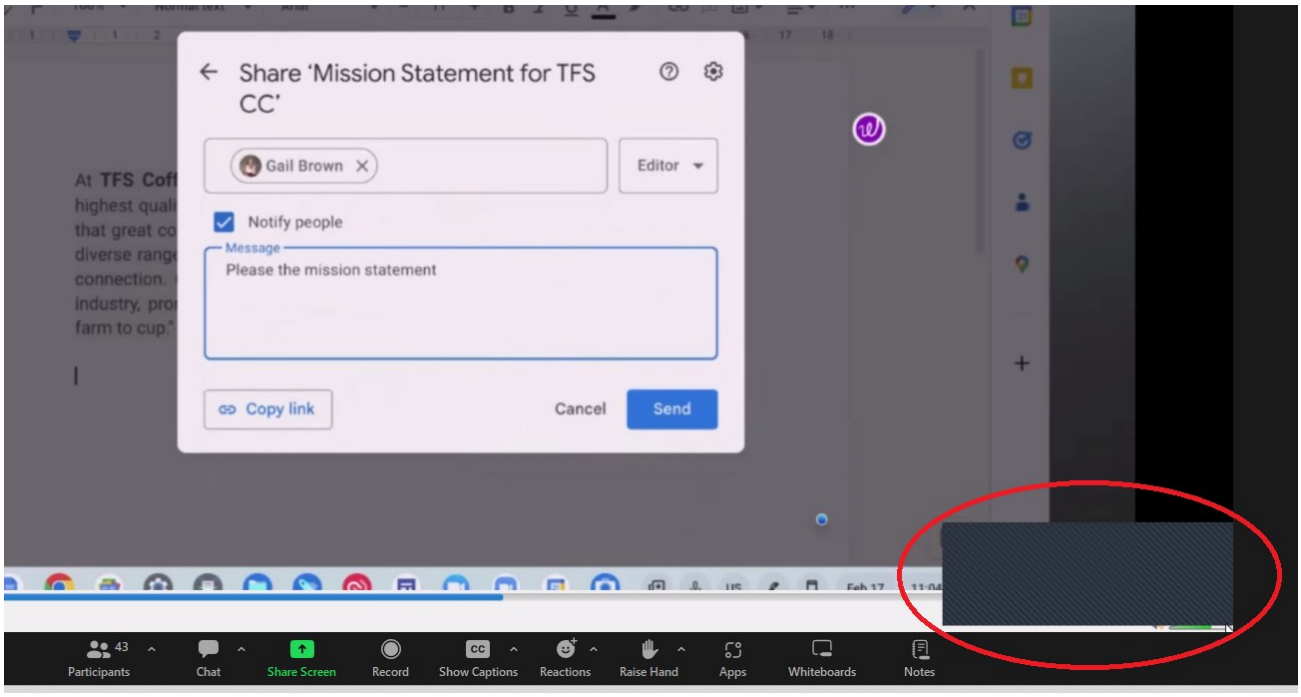


illustration 1

black box. It is circled for your convenience.

When the black box was drawn to his attention, Paul could not see it on his computer. Near the end of the meeting, Paul used an Android tablet to log into the Zoom meeting. Then he could see the box in Zoom when he was screen-sharing a meeting video from his computer.

At the end of the meeting, Paul asked a few of us to stay connected to the Zoom meeting so we could troubleshoot the black box. We found an answer in about 30 minutes.

The black box resembles the effect of any Windows popup or third-party app popup in that part of the screen while the user is employing the Zoom screen-share feature. This is

because Zoom captures and transmits a screen-share by literally capturing all the pixels of a computer screen, or a window of a screen-shared application,

As it happens, Paul's computer screen did not include any such popup.

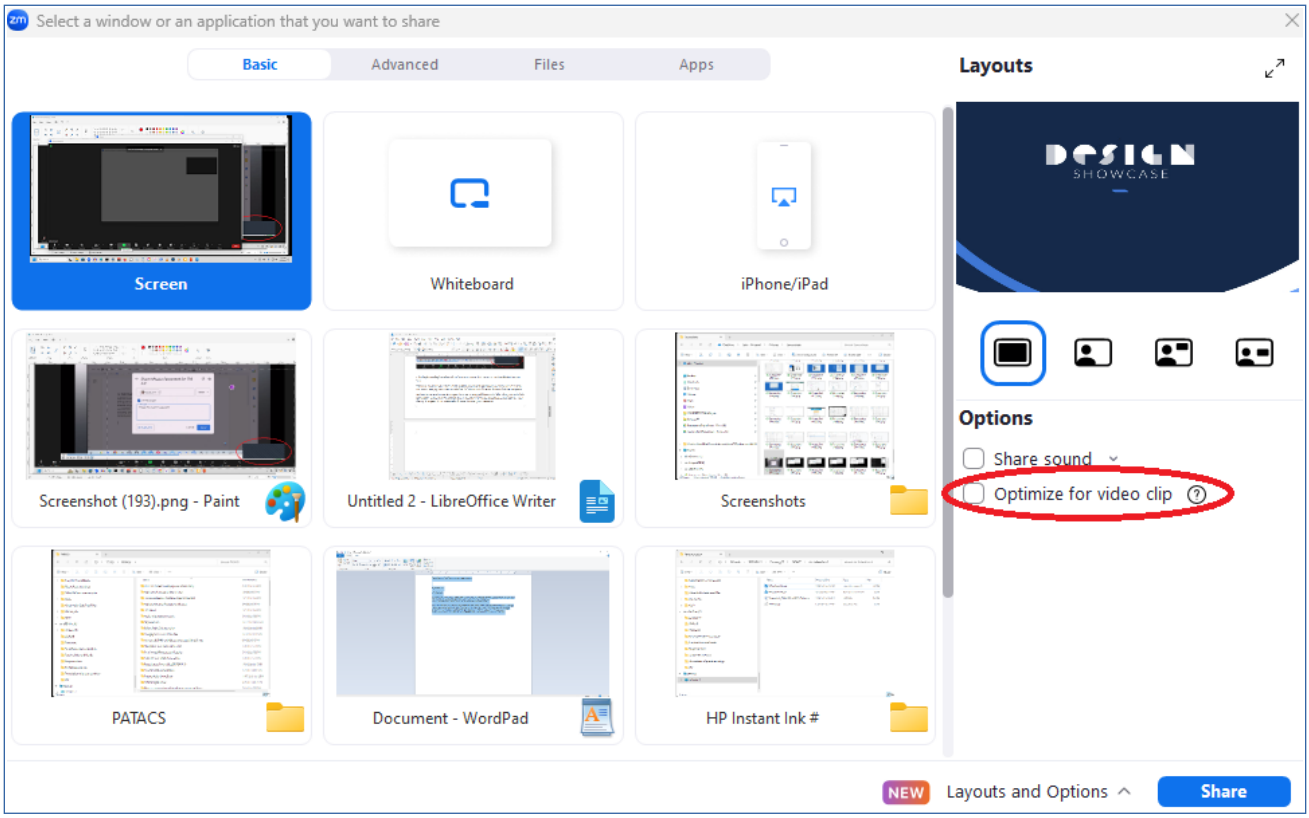


illustration 2

The answer turned out to be a Zoom option for screen-sharing called **Optimize for Video**. Along with the long-familiar screen-share **Include Sound** option, the **Optimize for Video** option appears on the right side of the screen when a Zoom user is selecting an application for screen-sharing. That option is shown in **illustration 2**.

When Paul clicked the **Optimize for video clip** button, selected the video player app, and clicked the Share button, the black box appeared.

When Paul did ***not*** click the **Optimize for video clip** button, and selected the video player app, and clicked the Share button, the black box did ***not*** appear.

The black box does not appear universally

I tried and failed to replicate the black box appearance using my Windows computers. That failure happened in both Windows 10 and 11 when I clicked the **Optimize for video clip** button while initiating a video screen-share in a Zoom meeting.

On the Windows 11 computer, the Zoom version tested was 5.17.7. Later I installed version 5.17.10 and reviewed the list of resolved bugs. That list did not mention an issue resembling the black box during a screen-share.

So far we do not know what specific computer hardware or software caused the black box to appear on Paul's computer and not on my two.

What does *Optimize for Video* do?

Zoom's documentation says the **Optimize for Video** option was introduced many years ago when some Zoom users had only very low-cost computers that could not capture and transmit every frame of video being screen-shared from those computers. The option must disable some other parts of Zoom so that screen-sharing a video works better.

If you use a modern computer with the equivalent to an Intel Pentium I5 or higher CPU, or an Apple M1, M2, or M3 chip, then you do NOT need to use the Optimize for Video feature. You have plenty of horsepower to screen-share a video. The option is left over from a prior era.

Recommendation

I suggest that anyone using a Windows computer and Zoom for screen-sharing a video should not use the **Optimize for video clip** button unless a pre-meeting Zoom test including a video screen-share proves that the black box does not appear when the button is used for screen-sharing.

###

Rescuezilla – A Flexible Backup Solution

By Alan German, Treasurer, Ottawa PC Users' Group, Ontario, Canada https://opcug.ca
Originally published: May 2023

For several years, my disk imaging backup program of choice has been Macrium Reflect *Free* Edition; however, recently, Macrium's developers announced that the free version is to be discontinued. Security updates will be provided until January 1, 2024, after which, although the program can still be used, no new features or support will be provided. Consequently, this seems to be a good time to seek out an alternative backup solution for the long term.

The other aspect of this issue is my growing preference for Linux over Windows, especially given that none of my computers will support Windows 11, and the end-of-life date for Windows 10 is October 2025. However, my previous experiences with disk imaging programs for Linux have found these lacking the flexibility and ease of use offered by their Windows counterparts.

For example, Clonezilla has an old-style, text-based interface that is somewhat complex and difficult to navigate. The program can create a backup using either its *SaveDisk* or *SaveParts* feature. *SaveDisk* allows the entire disk to be restored but will not restore single partitions. In contrast, *SaveParts* will restore one or more partitions but will not restore the master boot record or the partition table and so can't be used to restore the entire disk. This is not very helpful when it comes to flexibility in restoring disks and/or partitions.

But now, there is a new kid on the block – ***Rescuezilla*** – that offers a user-friendly, graphical user interface, clearly-defined icons and menus, for specific tasks, and the flexibility to save and restore both disks and partitions.

Rescuezilla can be downloaded as an ISO file. The current version is 2.4.2 (Ed.'s note: as of July, 2024) and can be downloaded here: *https://rescuezilla.com/download*. It can be used to create a bootable USB flash drive. As the "jammy" portion of the file name indicates, the USB boots into a version of Ubuntu Linux; however, this operating system is initially hidden from the end user as ***Rescuezilla*** loads in full-screen mode.

The main menu provides *Backup* and *Restore* options, in addition to icons for *Clone*, *Verify Image*, and *Image Explorer*. The latter option is a work in progress and is intended to allow mounting a disk partition directly from the backup image in order to extract individual files and folders. However, for our present purposes, we will just consider the main two options for *Backup* and *Restore*.

Selecting *Backup* launches a wizard that steps through the required process. First, the source drive that is to be backed up is selected from a menu of available disks. *Back* and *Next* buttons on the individual screens allow easy navigation. The subsequent screen, *Step 2: Select Partitions to Save*, allows selection of the partitions that are to be included in the backup. Windows users should note that since we are using a Linux system, no drive letters are used. Rather, the partitions are listed with drive and partition numbers, the size of the drive, the file system, and any partition label.

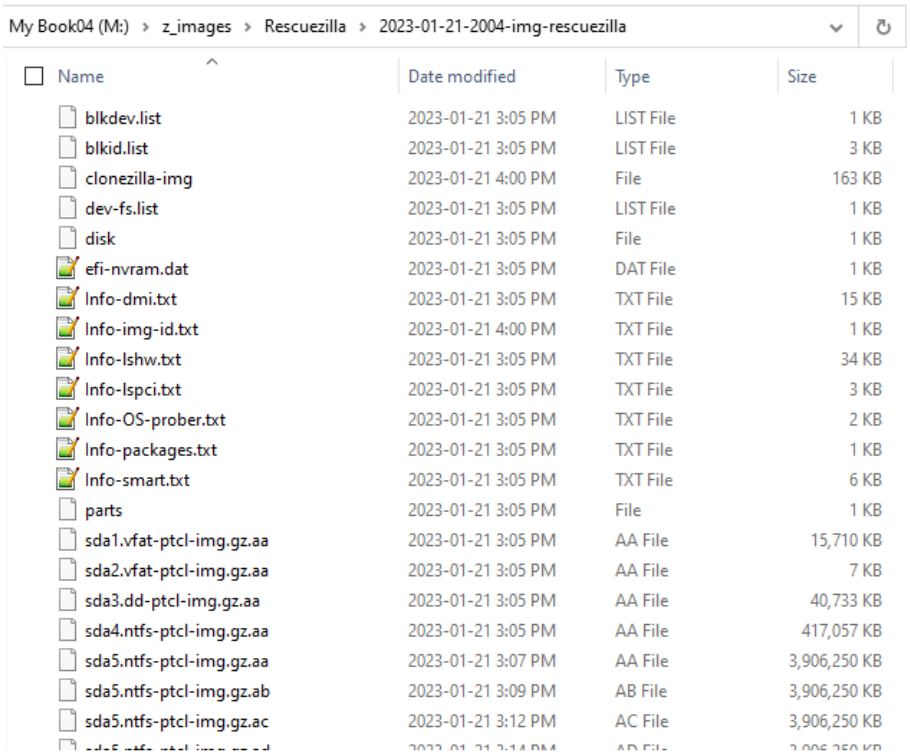
If not all the partitions are to be backed up (or restored), it's clearly important to be able to identify the desired partition using the information that is displayed. For example, the screenshot shows the partitions for a disk that dual boots Windows 10 and Linux. The Windows partition (Drive C:), Partition 5, is labeled as Windows 10, while the Linux partition, Partition 9, is using the ext4 file system.

By default, all of the available partitions are checked and so, to make a full disk image backup, we just have to press the *Next* button. The subsequent screen allows selection of the destination drive on which the disk image is to be stored. This is followed by a similar screen that selects a folder on the destination drive as the storage location. Once again, a Linux protocol specifies a mount point as */mnt/backup*. This can be refined by using the *Browse* button to point to a specific folder on the destination drive, e.g.*,/mnt/backup/z_images/Rescuezilla*.

The next screen provides a default name for the backup image (e.g., *2023-01-21-2004-img-rescuezilla*), allows this name to be customized, and displays an option to include descriptive text. This is followed by a screen on which the compression algorithm and level can be specified. These can readily be left at their default settings of gzip and 6, respectively.

The final screen provides a summary of settings selected, including the source drive and the partitions to be backed up. Clicking on *Next* starts the backup process, which then runs unattended.

The resulting image takes the form of a folder with multiple files that are clearly a mix of administrative information and segments of compressed partitions (e.g., sda5.ntfs-ptcl-img.gz.aa, gz.ab, gz.ac). In my baseline test, the overall file compression was approximately 60%.



Restoring from a backup image is essentially the reverse of the backup process. The image file on the backup disk is identified; the partition(s) to be restored and the disk on which the partition(s) is to be restored are selected. I tried a number of restorations, including just my dedicated data drive, which I could verify against a file-by-file backup stored on a USB flash drive. I also restored the Linux operating system partition and swap area (Partitions 9 and 10), and the entire drive. In each of the latter cases, success was confirmed by the fact that the disk subsequently booted normally into both Linux and Windows via the GRUB boot menu.

For me, these tests have confirmed that *Rescuezilla* is a viable backup/restore solution for my system. For Linux users, the processes and nomenclature will be straightforward. Windows users will perhaps need to pay attention to the listings of disks, partitions, and folders, as the designations (e.g., mount points) are quite different between Linux and Windows. However, that being said, the fact that *Rescuezilla* functions as a live USB provides a ready-made backup option for both operating systems and can be used even if the PC refuses to boot normally from the hard drive.

Rescuezilla (Open source)
Version 2.4.1
https://rescuezilla.com

###

Starlink – It may be in your future

By Phil Sorrentino, philsorr@yahoo.com
Secretary & Newsletter Contributor Sun City Center Computer Club
https://scccomputerclub.org/

Starlink is a satellite constellation built and operated by SpaceX, currently providing satellite internet access coverage to over 53 countries. Starlink is the world's first and largest satellite constellation using a low earth orbit to deliver broadband internet capable of supporting streaming, online gaming, and video calls. Starlink will become a critical element in the client-server technology used by the internet in many areas worldwide.

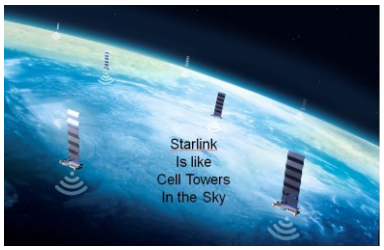
Client-server technology is the network architecture that connects our devices to powerful servers at the far ends of the country and, in some cases, the world. The internet provides this connection, so the devices and servers appear close in adjoining rooms. To make this a reality, the internet connection must be high-speed. This type of internet connection is called a low-latency connection. A connection that is so fast that a message might go from New York to Los Angeles and back in less than .1 of a second (100ms). Starlink can deliver high-speed, low-latency internet to users worldwide, though it may be a little expensive now.

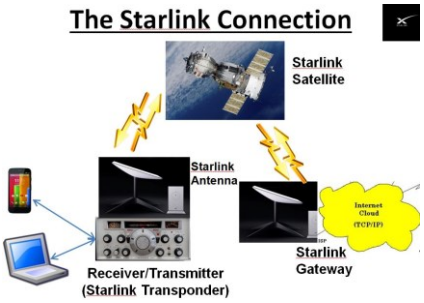
To take advantage of the servers on the internet, our devices (computers, smartphones, tablets) must be able to connect. Either of two mechanisms traditionally does this. If you are stationary, typically in a building, you can connect to the internet through your internet service provider (ISP) and more than likely connect via a wireless wi-fi network. If you are moving in a vehicle, you can connect through your wireless internet provider via the cell towers in all major populated areas and along most major highways in the US. Access to the internet is excellent in the US. Ninety percent of the people in the US have an internet connection available to them. New Jersey and Connecticut have the best broadband coverage at about 99%. As expected, the major cities, Washington DC, Philadelphia, San Francisco, and New York, have the highest internet participation. But the rest of the world is not covered very well. Europe has a participation rate of about 90%, but the numbers are much lower for underdeveloped countries like India at about 48% and China at about 70%. All things considered, worldwide internet participation is reported to be about 60%, which leaves a large population without access to the internet.

The Starlink satellite constellation currently has around 4,500 satellites and will eventually have around 12,000. They will cover most of the earth, providing an internet connection to any site with a direct view of the satellites as they pass overhead. Think of the satellites as cell towers in the sky.

The Starlink satellites are in low earth orbit (LEO), about 340 miles above the earth, and have a speed that creates a 90-minute orbit around the planet, about 17,000 mph. When the constellation is entirely built out, a satellite will be accessible by almost

every place on the earth. A device will send/receive data to/from the internet via the Starlink transponder, overhead satellite, other satellites, and finally, the Starlink gateway (ground station). The connection of the Starlink transponder to the overhead satellite will continue until the satellite moves out of view and another satellite comes into view. At this time, the connection from the transponder will switch to the new satellite, and the data flow will continue.



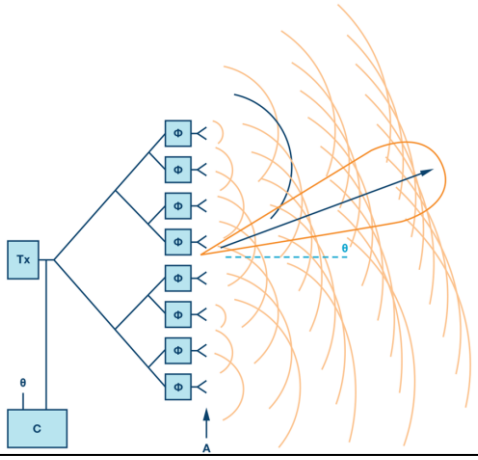


The Starlink transponder controls the tracking of satellites when they are in view and switching the data stream to a new satellite. The heart of the transponder is a sophisticated computer-controlled phased array antenna system.

Phased array antennas are a key component of the cell tower communications systems we use as we travel on the interstate highway system. The phased array antenna was invented by Karl Ferdinand Braun in 1905. The initial experimental antenna was a three-element array that transmitted a beam whose direction could be aimed electronically in 3 specific directions, 120 degrees apart. The military experimented with phased arrays in the 1970s, the first industrial phased array systems were introduced in the 1980s, and cell tower antennas appeared in the 1990s. Today's phased array antennas have large numbers of elements and can form several very narrow beams and steer them independently in very small angle increments. The technology behind phased array systems is steeped in the propagation of electrical energy from Gauss's laws for static electric and magnetic fields to Maxwell's equations that relate electric and magnetic fields to each other. It is a collection of technology concepts that would make Nikola Tesla proud.

Just a little technical talk. A phased array antenna is a collection of antenna elements assembled such that the radiation pattern of each element constructively combines with neighboring antennas to form an effective radiation pattern called the main lobe. The main lobe transmits radiated energy in the desired direction, while the antenna is designed to destructively interfere with signals in undesired directions, forming nulls and side lobes. The antenna array is designed to maximize the energy radiated in the main lobe while reducing the energy radiated in the side lobes to an acceptable level. The radiation direction can be manipulated by changing the amplitude and phase of the signal fed into each antenna element.

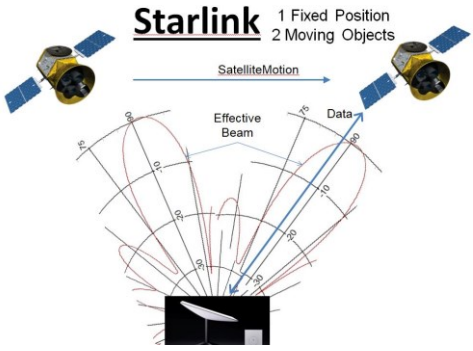
As we travel down the highway, the closest cell tower tracks us with a phased array antenna that allows us to connect to the internet. The tracking allows the cell tower system to transition a vehicle to the next cell tower in the direction the vehicle is



Phased Array pattern showing antenna elements creating a central lobe

moving, thus allowing the communications to continue uninterrupted as the vehicle is handed off from cell tower to cell tower. This is all coordinated using the phased array antennas on the cell towers.

This cell tower hand-off is similar to the hand-off used to transition from one satellite to another as the satellites move in the sky. The phased array antenna in the Starlink transponder tracks the satellites and coordinates the hand-off when needed so that the communications continue without interruption.



Starlink is an enormous project that combines many technologies to hopefully provide global access to the internet so that we all can take advantage of the servers at the other end of the internet, just as if they were in the adjoining room. It may just be in our future.

###

Private Browsing: Is it all it's cracked up to be?

By Chris Taylor, President, Ottawa PC Users' Group, Ontario, Canada https://opcug.ca

For well over 10 years, web browsers have offered ***private browsing***, designed to keep your browsing—well—private.

Google Chrome calls it an ***Incognito window***, Firefox, Opera & Brave call it a ***Private window***, and Microsoft Edge calls it an ***InPrivate window***. The easiest way to get there is to right-click the browser's icon on the taskbar and choose the appropriate ***New…*** item from the pop-up context menu.

When in a private browsing window, browsing history, cookies & site data (such as images and contents of webpages), and information entered in forms are not saved to your computer. Other users on your computer will not be able to see your web browsing activities. When browsing, web servers won't automatically recognize you as a returning user, and you won't be automatically signed into websites.

When you close a private browsing window, the browser discards site data and cookies created during that session. Note that you need to close the private browsing window to the previous page visited in that window.

Private browsing deactivates extensions. You can enable extensions in private browsing windows if you need them. For example, in Google Chrome, click the kebab menu (⋮) at the top-right of the window. Choose ***Settings***. Find the extension you want to allow in Incognito windows and click ***Details*** under that extension. Toggle on ***Allow in Incognito***.

Private browsing is not a panacea
It does not prevent all tracking. While websites do not have the luxury of using cookies to track you, there are many other means of tracking. For example, a web server can know your operating system, browser version, extensions you have loaded, screen resolution, IP address, and more. These data items can be used to fingerprint and track you.

Private browsing does not prevent ads. It does not prevent malware. It does not hide where you are browsing from your ISP or employer.

As Gizmodo reported in October 2022, ***Even Google's Own Staff Thinks 'Incognito Mode' Isn't All It's Cracked Up to Be*** – https://gizmodo.com/google-incognito-mode-google-chrome-1849648071

Where is private browsing useful?
If you are using a computer at a public kiosk, it will prevent the next person using the computer from easily seeing where and what you browsed.

If you use multiple accounts on a single website, a private browsing window can help you keep things separate.

If you are using another person's computer, it can be helpful in making it less likely you leave traces behind.

Strangely, I have encountered shopping sites that require private browsing for the checkout process to work properly. I guess they didn't want to sell things to me all that badly.

For more information about private browsing, see https://en.wikipedia.org/wiki/Private_browsing.

###

Can Two Files Have the Same Name?

By Jim Cerny, JimCerny@gmail.com
1st Vice President, Sarasota Technology Users Group https://thestug.org/

It was the usual family gathering. And, as usual, Uncle Backup and Aunt Fowlder were arguing. They both use Windows computers, and both save files into folders. Uncle Backup said, "NO, of course not; you cannot have two files with the same name; Windows won't allow it!"

"Oh, don't be silly," said Aunt Fowlder. Of course, you can. I do it myself whenever I copy a file—it copies it with the same name!"

Well, dear reader, who's right? This is a great trick question to bring up over beverages whenever you are in a tech discussion with friends.

The answer? Well, the answer is they are both right! *Well, sort of.* Fortunately, their argument was overheard by the good doctor, Doc Ewewmint.

"May I help you?" interrupted the good doctor, "Yes, you CAN have two files with the same name if they are in different folders! Let me explain. If you copy a file to a different folder, it can have the same name as the source file. But now you must remember carefully which folder you put it in. If you change one of the files but not the other, even if they have the same name, they will now be different."

"Oh, that could cause trouble," said Aunt Fowlder, "so when I copy my files to back them up on a different device, I name the folder "Backup" and the date or something. That way, I know they are not the ones I actively use and change daily. I am thankful that Windows keeps track of the date of each file."

It happens that Aunt Fowlder's husband also overheard the discussion. "Well," he said, "that's all true, of course, but you can have two files that appear to have the same name in the same folder – but they would be of different file types! You could have a word processing document file created in Word, for example, and another with the same name created by Word Pad. They would have different file types -- ".docx" (or ".doc" for Word) or ".rtf" (for WordPad) -- but other than that, they could have the same name."

"That's because the file type is part of the name!" said Aunt Fowlder. "My husband is so right about that." (Ed's note: the part after the last period in a file name is known as the *extension*. The extension tells what program created the file. If the file is an image/graphic, then the extension only tells us that its an image—not the creating program.)

"Yes," said the good doctor, "and the computer keeps all this straight. The computer recognizes the folder path to get to the file you want because you can have the same file name (even with the same extension) in different folders. The "path" of the folders to get to the file is also part of the file name. Thus, you can never have two files with the same name!"

Well, I'm glad we all settled that and agreed! Now, should I use "Save" or "Save as"?
(Ed's note: Use "***save***" when you want to overwrite an already-named file. Use "***save as***" when you want to rename the file ***or*** change its location.)

###

Pack your bags!

By Lynda Buske Ottawa PC Users' Group, Ontario, Canada https://opcug.ca

As you already know, one of my interests is travel photography, and we are entering the season when many of us travel far (or near) to experience and photograph new locations. A stay at an area B&B or a friend's cottage can provide ample opportunity to enjoy a different life from your normal routine. Perhaps you have time to notice nature's beauty when the pace is slower and your schedule is not so packed. Maybe you also have the chance to view familiar things from a different perspective. Finding beauty that others walk by is a comment I often hear with respect to my photos.

I have often written about travel photography, so here are some links to past articles you may find useful.

Tips for travel photography. Review my five tips for better travel photos.

https://opcug.ca/Photography/TipsForTravelPhotography.pdf

Rainy day photos. Don't spend vacation days inside when rainy days offer enticing photographic opportunities.

https://opcug.ca/Photography/RainyDayPhotos.pdf

Shooting near water. Canadians have abundant opportunities to visit lakes and seasides, so review these tips before heading to the beach!

https://opcug.ca/Photography/ShootingNearWater.pdf

Don't miss the road shots! Don't miss photo opportunities from the passenger seat or on a bus.

https://opcug.ca/Photography/RoadShots.pdf

What to do with all those travel photos? How to organize your pics once you are home. Please note that the article refers to Shutterfly.com. As of March 2023, setting up a personalized site for sharing on Shutterfly is no longer an option. I would suggest trying a site like Flickr, where you can post 1000 free photos and provide links to friends. (Ed's note: another truly great site for storing one's images is SmugMug.com.)

https://opcug.ca/Photography/WhatToDoWithAllThoseTavelPhotos.pdf

Happy travels!

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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)
Fairfax Health/Safety: https://www.patacs.org/fairfaxattreqmts.html
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