



OTTAWA

PC NEWS

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ARTICLE

Exploring Linux – Part 29: Three Ways to Try Linux – VirtualBox Installation

by Alan German

Previously we downloaded the ISO file for Linux Mint 21 Cinnamon Edition, created a bootable USB flash drive using this file, and looked at how to try out the features of the distro by simply booting into the live-USB version of Mint. This time we will use the ISO file to create a Linux virtual machine (VM) directly on our Windows 10 desktop using Oracle's VirtualBox virtualization software package.

Note that, while this article discusses how to set up a virtual machine using Linux, the initial procedure to establish the VM can be considered to be a general tutorial on the basics of using VirtualBox. Furthermore, the process of installing a Linux distro as the operating system for the VM is similar to that required for any other OS.

From the VirtualBox web site (<https://www.virtualbox.org>), click on the blue box labelled Download VirtualBox 7.0.

On the following page, we will download two files, firstly *VirtualBox-7.0.4-154605-Win.exe*, using the *Windows hosts* link under *VirtualBox 7.0.4 platform packages*. We will also download *Oracle_VM_VirtualBox_Extension_Pack-7.0.4.vbox-extpack*, using the *All supported platforms* link under *VirtualBox 7.0.4 Oracle VM VirtualBox Extension Pack*.

We can install VirtualBox by double-clicking on *VirtualBox-7.0.4-154605-Win.exe* and accepting the defaults offered by the installation wizard. The installation proceeds very rapidly and we click on *Finish* to complete the process. Running the newly-installed program displays the main VirtualBox window.



Our first task is to install the extension pack that we downloaded. The process is pretty simple; we just double-click on the file *Oracle_VM_VirtualBox_Extension_Pack-7.0.4.vbox-extpack*. However, note that if you are running Windows on a regular user's account it will be necessary to login as an administrator to install the extension pack. In particular, there is no *Run as administrator* option; you must be actually logged in as an administrator. Once again, a wizard guides us through the installation process. Note that it is necessary to read (or at least scroll down to the end of) the licence agreement before the *I Agree* button is activated. Once the installation is complete, control is returned to the main program window and we are ready to create our first virtual machine.

First, we need to set up the parameters for the VM. Clicking on the *New* icon brings up a dialogue box where we can enter Linux Mint 21 as the *Name* of our machine and then browse, using the drop-down menu in *ISO Image*, for our downloaded distro file *linuxmint-21-cinnamon-64bit.iso*. This sets *Type* as Linux and *Version* as Ubuntu (64-bit). While the latter designation may seem odd given that we are installing Mint, we should be aware that Linux Mint is based on Ubuntu Linux so the selection is not unreasonable.

(Continued on page 7)

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Next Meeting: **WEDNESDAY, April 12th, 2023**

Next Meeting

Wednesday, April 12th, 2023

Computer – It is all about the bits!

Speaker: Stéphane Richard, OPCUG

This presentation provides a detailed view of how a computer works. It will answer questions, such as why bits are so important; how does a computer store text, numbers and images; what are the major components under the hood of your computer; how does a Central Processing Unit (CPU) work; what is assembly language; how do you fit millions of electronic components into one square inch of silicon; and many more. This presentation won't make you a computer engineer, but it will show you the basics of how a computer works!

Stéphane Richard is now retired after serving Canada for 35 years as a Communications and Electronics Officer for 20 years in the Canadian Armed Forces, and in the federal public service for 15 years, including 11 years as an executive. During his career in the Canadian Armed Forces, he mainly worked on the definition and implementation of multi-million dollar capital projects. During his career in the public service, he worked in the Department of National Defence, Passport Canada, Public Works and Government Services Canada, Shared Services Canada, and finally Public Services and Procurement Canada. In his last appointment, before his retirement, he was the contracting authority for the \$9 billion acquisition and in-service support contracts for the Maritime Helicopter Project.

This meeting will be via Zoom video conference.

Join us at <https://tinyurl.com/opcug-meeting>. The Zoom link will be live at 7:15 pm. The meeting will begin at 7:30 pm.



Coming Up...

Next Q&A Session: **Wednesday, March 22nd**

May 10

Members' Favourites Night (see article next page)

June 14

Annual Pizza Night (see article next page)

September 13

Directory Opus: the Ultimate Windows Explorer Replacement

Speaker: Serge-Érik Thériault (OPCUG)

October 11

Self-driving cars (details to follow)

Speaker: Bob Walker

November 8

Celestial Shadows – Eclipses of the Sun and Moon

Speaker: Howard Simkover

All scheduled **regular monthly meetings**, **weekly Q&A sessions**, and a link to **OPCUG presentations at the OPL** are posted on our website at <https://opcug.ca/#upcoming>. All events are via video conference until further notice.

2023 CALENDAR

Meetings	Date	Time and Venue
Regular Monthly Meeting	Wednesday, April 12 th	7:30 pm via Zoom video conference: https://tinyurl.com/opcug-meeting To see all scheduled events, visit https://opcug.ca/#upcoming
Next Q&A Session	Wednesday, March 22nd	Until further notice, Q&A sessions are no longer held after regular monthly meetings. Join us on all other Wednesdays for weekly Q&A .
Beer BOF (Wing SIG East)	Wednesday, April 12 th	Enjoy a cold brew or other beverage in the comfort of your home during the video conference.

UPCOMING EVENTS

Members' Favourites Night

It's everyone's favourite night! Yes, we have scheduled a Members' Favourites Night for **May 10th** and are looking for speakers. All presenters will receive a gift honorarium.

If you want to give a presentation, send an email to SuggestionBox@opcug.ca.

Consider your topic of choice, sharpen your thesis on the issues involved, and start creating your presentation today.



Annual Pizza Night

Pizza Time! Wednesday, June 14, 6 PM

Once again we are fast approaching the end of our OPCUG season, and once again we'll celebrate it with pizza, drinks and desserts. These are free for OPCUG members and their guests. This year we'll even have door prizes for our members.

The event will be, as always, on the second Wednesday of June, that is June 14, 2023, starting at 6 PM. We're planning to have it at one of the Ottawa parks (location to follow), under a sheltered area in case the weather does not cooperate, with free parking and bathroom access.

To help with planning, we're asking you to register by email (to follow). Tell us if you are bringing guests and how many, if you require special pizza accommodations (e.g. gluten-free, vegetarian), and if you need a ride or can offer a ride.

Details are still being worked out and will be communicated in the coming weeks. Check for updates at <https://opcug.ca/events/annual-pizza-night-2/>. Updates will also be included in the May and June newsletters.

We look forward to seeing you all in great numbers!



ARTICLE

Building a NAS System – Part 4: Plugins by Alan German

When we initially installed openmediavault (OMV), the installer didn't provide any option to partition the 250 GB system disk on the netbook so that OMV used all of the available storage for Linux and the OMV software. As a result, we used a 64 GB flash drive plugged into a USB port on the computer as the disk storage for files loaded onto the NAS. But, Linux and OMV are only using a small amount of the hard drive space in the netbook. Wouldn't it be nice if we could use some of the available storage on the hard drive as a dedicated data partition for the NAS? Sure, reading and writing to this disk would be somewhat slower than for the flash drive, but the access speed is likely to be perfectly acceptable for most purposes, and we would have a shiny – and empty – 64 GB flash drive to use elsewhere.

One of the available plugins for OMV is named ShareRootFs (<https://docs.openmediavault.org/en/6.x/plugins.html>) and the description of this software indicates that it “provides shared directories on root file system.” This is more or less what we want in that the plugin will allow us to create our shared NAS folder directly on the computer's hard drive rather than on an external USB flash drive.

The plugin can be installed from the web control panel. Navigate to *System – Plugins* and a list of available plugins is displayed. Scrolling down through the plugins we find *openmediavault-sharerootfs 6.0.2-1*. Select this plugin and note that the down-arrow icon (*Install*) has been activated. Click on this icon and confirm that you wish to install the plugin. A command window opens and the installation continues automatically. When the process is complete, click on *Close*.

When we return to the dashboard we can see that we now have access to the root filesystem (*/dev/sda1*) on the netbook computer, while the 64 GB nano-USB drive is still available (*/dev/sdb1*).

Device	Available	Used
/dev/sda1	213.41 GiB	2.20 GiB
/dev/sdb1	56.06 GiB	120.00 KiB

Device	Available	Used
/dev/sda1	227.23 GiB	2.0%
/dev/sdb1	56.08 GiB	1.0%

Checking *System Information* we find that this still indicates that updates are available; however, when we navigate to *System – Update Management – Updates*, we find that there are now only two packages in the queue. Furthermore, this time, installing these two updates completes successfully. While this takes a little time, the net result is that *System Information* no longer shows any updates available – our system is finally up to date!

As promised, the plugin allows us to use part of the netbook's hard drive as storage for our NAS in addition to running the operating system and NAS software on the same drive. The process is essentially the same as detailed in Part 2 of this series where we created a shared folder on a USB flash drive.

The netbook's hard drive is already in use as the system disk, so the disk is mounted and listed in *Storage – Disks* as */dev/sda TOSHIBA MK2565GSX*. Consequently, we just need to establish a new shared folder, named NASdisk, on this disk. Note that we must also navigate to *Users – Users* and select the entry with our Windows 10 username in order to activate the folder/key icon (*Shared folder privileges*). Clicking on this icon then allows selection of Read/Write for the new NASdisk share. As always, changes must be saved and confirmed in OMV in order that they take effect.

The NASdisk shared folder can now be mapped to a drive letter in Windows 10.

Since the 64 GB USB drive is still in use for the NASdrive share, the next available drive letter for the NASdisk share is Y:. With all of the above operations completed, *File Explorer – Properties* reports that Drive Y: has 14.4 GB of used space and 212 GB of free space.

Given that we now have a large amount of disk storage available to the NAS, we can discontinue the NASdrive share on the USB flash drive. To do so, we must reverse our previous actions on this share. To remove the Windows share to NASdrive and the mapped drive Z:, right-click on *NASdrive (\\OPENMEDI VAULT) (Z:)* in File Explorer and select *Disconnect*. In OMV, navigate to *Users – Users – <Your username>*, select the folder/key icon (*Shared folder privileges*), and click on *No access* for the NASdrive listing. Now, navigate to *Services – SMB/CIFS – Shares*. Select *NASdrive*, click on the trash can icon (*Delete*), and click *Yes* to delete the share. Next, navigate to *Storage – Shared Folder*, select *NASdrive*, click on the trash can (*Delete*), then *Yes* to confirm that the shared folder is to be deleted. Finally, navigate to *Storage – File Systems*, select */dev/sdb1*, click on the small square icon (*Unmount*), and click on *Yes* to confirm this action. Note that for all of the above steps, the changes must be confirmed in order to be applied.

The 64 GB nano-USB drive can now be removed from the netbook computer and repurposed. Shut down the netbook and remove the USB drive. When the NAS server is rebooted we will still have access to the large shared folder on the netbook's hard disk mapped to Drive Y:.

Bottom Line:

openmediavault (Open source)
Volker Theile
Version 6.0.24
<https://www.openmediavault.org>

Automatic HTTPS

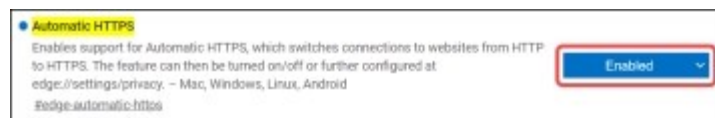
by Chris Taylor

We all know that we should use **https** (which uses an encrypted session) to browse the web, rather than **http** (which does not use encryption), even though it's not a panacea (see my December 2018 article *What does https really mean?* (<https://opcug.ca/Articles/1812NEWS.pdf>)).

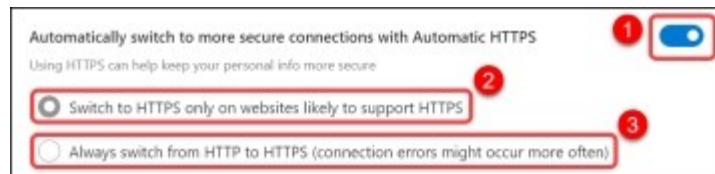


Many sites are set up to automatically switch from http to https: try browsing to <http://google.ca> and it will switch to <https://google.ca>. But there are sites supporting both http and https that don't automatically switch. In June 2021 Microsoft introduced an experimental feature called *Automatically switch to more secure connections with Automatic HTTPS* in Microsoft Edge v92 and announced it in the Windows Blog at <https://blogs.windows.com/msedgedev/2021/06/01/available-for-preview-automatic-https-helps-keep-your-browsing-more-secure/>. Even in Edge v106 (current as of this writing), the feature is still buried where you have to be pretty deliberate to enable it.

In the address bar in Edge, type `edge://flags/#edge-automatic-https` and hit Enter. Set the entry *Automatic HTTPS* to *Enabled* and restart Edge.



In the address bar in Edge, type `edge://settings/privacy` and hit Enter. Scroll down to the Security section and toggle on *Automatically switch to more secure connections with Automatic HTTPS* (1 in the screenshot below). You then have two options; *Switch to HTTPS only on websites likely to support HTTPS* (2 in the screenshot) and *Always switch from HTTP to HTTPS (connection errors might occur more often)* (3 in the screenshot).



I am not sure if the first option works all that well (don't forget this is an "experimental" feature). I don't like the wishy-washy nature of the word "likely". It does not work with the site <http://www.example.com> even though the site supports <https://www.example.com>. Even odder perhaps, <http://example.com> switches automatically to <https://example.com>. The second option *Always switch from HTTP to HTTPS (connection errors might occur more often)* seems more aggressive, switching both <http://example.com> and <http://www.example.com> to their https equivalents.

I thought the second option might prevent me from browsing to http sites, but with it set, I browsed to <http://neverssl.com> and was able to connect with no problem.

Even though my experience with the experimental feature seems less than a complete solution, I don't see any major downside to using it. According to the blog posting, even if a webpage is prevented from loading, you will get a message that provides the option to continue to the site.



Quick Tip 52: Sharing sound over Zoom

by Chris Taylor

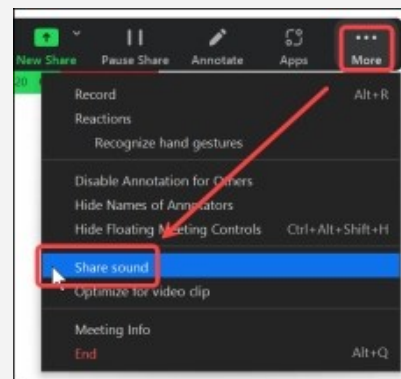
If you want to present at Q&A (or any Zoom meeting) and are sharing a demo where system sounds are important, such as a video clip, you can optimize the sound quality.

By default, when you share your screen, any system sounds (including that video clip with sound) are played through your computer's speakers and are picked up by your microphone. However, the sound quality can be iffy at best.

Click the Zoom **Share** control. When prompted to **Select a window or an application...**, check the **Share sound** box in the lower-left. Choose mono or stereo by clicking the down-chevron.



All system-generated sound will go directly to the Zoom stream and be clearer for your audience. If you forgot to **Share sound** before you started sharing, click the **More...** button in the Zoom controls and choose **Share sound**.



System sounds will also play through your speakers and may be picked up by your microphone, so you might want to turn down your speakers or use a headset while your program is being shared.



THROUGH THE LENS

A guide to digital photography for computer enthusiasts. After the click of your camera, you're only half done!

Photo cleanups

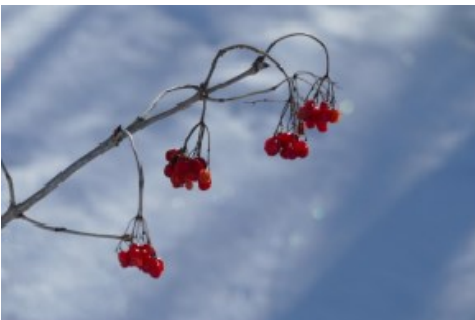
by Lynda Buske

Bob Herres recently gave a presentation at Q&A on the Cleanup.pictures website (https://opcug.ca/qa_recordings/20230201_PowerPoint.pdf). It allows you to remove unwanted objects in your photo such as overhead wires, garbage cans, posts, etc. I used it to remove an unwanted branch in my photo below and you can see if it did a very good job. I then compared it with using the free Photoscape X photo editing program on my desktop. It too did a fine job.

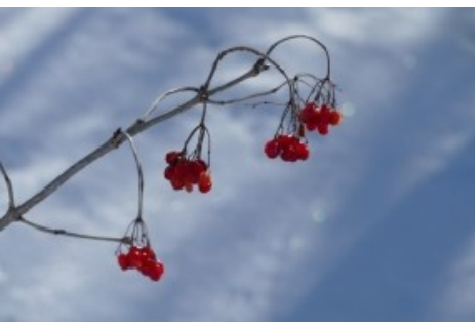
Original



Using cleanup.pictures website



Using Photoscape X "spot healing"



Although both programs worked well, it was a fairly simple item to remove. In the case of the photo below, there were a lot of wires to remove, some of which touched the trees. After only two "brush strokes", cleanup.pictures did a much better job than Photoscape X. For removing the wires properly, I could achieve as good a result using PhotoScape X but it took 10 minutes vs 10 seconds and I resorted to the clone brush (in the paid version) to remove the pole as the spot removal tool was not really up for the job.

Original photo by Bob Herres



Two "brush strokes" with cleanup.pictures



Two "brush strokes" with Photoscape X



Pros and Cons

So while cleanup.picture does a great job, the free version only allows for a 720p quality. To get a better quality image that would enable printing in a large format (say 8x10 or more), you would need the paid version which costs between \$2 and \$5 per month. You don't really have control over how the program works but that is not necessarily a bad thing if you like the results.

With Photoscape X, you have full control of many editing tools including a good quality spot healing brush. I find it works best with small sections of the image. This, of course, takes more time and you may have to smooth the resulting background afterwards to make it look natural. There are smoothing/ blurring tools available to achieve this. Note: I would not recommend using Windows Photos that comes with Windows 10 since their spot remover is really just suited to remove spots not a large area.

Bottom Line

For the removal of unwanted objects in a casual photo, cleanup.pictures appears to do a good, quick job. For something you are going to print and hang on your wall, I recommend take the time to use a full featured photo editing program.

<https://cleanup.pictures/>



This article is also in PDF format on the OPCUG website at: <https://opcug.ca/digital-photography/>.

Linux *(Continued from page 1)*

Clicking on *Next* brings up a further dialogue box where we can customize our installation. We can overwrite the *Username* and *Password* with values that make sense to us rather than leaving the default entries. We should also select the *Guest Additions* checkbox that will optimize the installed OS. The wizard doesn't seem to like the *Hostname* of Linux Mint 21 so, in order to continue with the installation, we need to remove the spaces and make this entry LinuxMint21 before we can click on *Next*.

The subsequent screens set up the parameters for the VM, including the amount of memory, the number of processors, and disk size. In this first instance of installing a VM, we will accept the default values for all of these and just keep clicking on *Next* to continue until we reach the *Summary* screen where we can click on *Finish*.

The main program window now shows that a Linux Mint 21 virtual machine is available, and this is automatically powered up to display a second window showing the *GRUB* (Grand Unified Bootloader) menu. We can then press *Enter* to use the first menu option *Start Linux Mint 21 Cinnamon 64-bit* to fire up Mint 21 as our VM.

A pop-up messages indicates *Mouse integration*. Clicking on this text displays details of the advisory which tells us that the guest OS (Linux Mint) supports mouse pointer integration. This simplifies use of the mouse in both the VM and on the Windows 10 desktop as the operations between the two are completely seamless. Otherwise, it is necessary to "capture" the mouse pointer in the VM and subsequently restore the mouse function to the Windows desktop using various control key sequences. To remove the advisory message, click on the *Delete finished notifications* icon in the top-right corner of the pop-up window.

Now, while we appear to have a virtual machine running Linux Mint, we haven't actually installed Linux on the VM. The current state is like booting a computer using a live-USB. However, before we do install Linux, let's first check that we have an Internet connection.

Click on the icon in the panel to run the Firefox web browser. Two tabs will be displayed, one indicating *Welcome to Firefox*, and the other headed *Firefox Privacy Notice*. Selecting this second tab shows that the page has been loaded from <https://www.mozilla.org/en-US/privacy/firefox/> which confirms that we have web connectivity.

So, now let's double-click on the Install Linux Mint icon on the VM's desktop and start the installation process of the Linux Mint operating system.

A *Welcome* screen offers us an option to read the release notes for Mint 21 but we can readily forego this. Instead note that the default selection for language is English so we can simply press *Continue* to proceed. Similarly the subsequent screen has English (US) has the default entry for the *Keyboard layout* so once again we can press *Continue*.

On the next screen, check *Install multi-media codecs* and press *Continue*.

The subsequent screen is labelled *Installation type* and wants to know on which disk or partition Linux is to be installed. The default is *Erase disk and install Linux Mint*. Normally, when using the computer's hard disk, I would opt to install Linux on a separate partition; however, since we are using a virtual machine, running on a virtual disk, it is perfectly fine to use the entire virtual disk for the installation. Pressing *Install Now* brings up a screen asking *Write the changes to disks?* At which point we can once again press *Continue*.

Now a screen asks *Where are you?* for which *Toronto* may be the default (based on the location of your Internet Service Provider's server). The actual city is irrelevant since Linux really wants to know in which time zone you are located. Responding with *Toronto* establishes EST/EDT.

The final user-input screen wants entries for *Your Name*, *Your computer's name*, *Pick a username*, and *Choose a password*. Enter your preferred values for each of these items. You can use anything you wish for your name and the computer's name. The username must begin with a lower case letter although, subsequently, you will not

normally be prompted for the username (i.e. entering the username is not required to login to the system). Note that, by default, the checkbox labelled *Require my password to login* is activated. So, if you accept this default, make special note of the login password that you selected as this will be required to login (and for any subsequent root operations). With the data entries complete, press *Continue* one last time.

A series of information screens is now displayed as a progress bar indicates that the installation of the OS is proceeding. Eventually, an *Installation Complete* pop-up dialogue box asks *Continue Testing* or *Restart Now*. We will restart the VM and proceed with trying the features of Linux Mint just as though we have installed the operating system on a real computer.

We can ignore the instruction to remove the installation medium. The VM reboots and requests the password that we selected during the installation. The first screen includes the *Welcome to Linux Mint* tutorial. You can click through the items listed on the left-side menu, but it's also useful to uncheck the box labelled *Show this dialog at startup* on this initial screen to prevent the information being repeated ad nauseum.

The final screen should look familiar. It's basically the first screen that is displayed when a live-USB is booted, minus the option to install Linux (which we have just done!)

We will take a closer look at some of the things we can now do with Linux running in a virtual machine, but first we will do a little more configuration of the VM. But, both of these will have to wait until the next article in the series.

Bottom Line

VirtualBox (Freeware)
Oracle Corporation
Version 7.0
<https://www.virtualbox.org>



OTTAWA PC NEWS

Ottawa PC News is the newsletter of the Ottawa PC Users' Group (OPCUG), and is published monthly except in July and August. The opinions expressed in this newsletter may not necessarily represent the views of the club or its members.

Member participation is encouraged. If you would like to contribute an article to Ottawa PC News, please submit it to the newsletter editor (contact info below). Deadline for submissions is three Sundays before the next General Meeting.

To receive the monthly newsletter by email, send an email to:

opcug-newsletter+subscribe@googlegroups.com (leave subject and body fields blank)

You do **not** need to create a Gmail or Google Groups account.

To subscribe to other OPCUG Google Groups member services, go to:

<https://opcug.ca/google-groups-how-to/>

Group Meetings

OPCUG meets on the second Wednesday in the month, except July and August, at the Riverside United Church, 3191 Riverside Drive, Ottawa. Parking is free at the church. OCTranspo bus #90 stops nearby. Details at <https://opcug.ca/venue/>.

(NOTE: Due to COVID-19 safety guidelines, all our events are via video conference until further notice. Details at <https://opcug.ca/venue/>)

Meetings are 7:30–9:00 p.m. followed by a Q&A Session until 10 p.m.

OPCUG Membership Fees: \$20 per year
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Q&A HAS GONE ON-LINE! WEEKLY!

Because of the pandemic, the OPCUG is holding weekly Q&A sessions in Zoom video-conferences.

Join us every Wednesday (except on regular monthly meeting nights) at 7:30 pm to discuss computer issues. Questions (and answers) on any computer-related issue are welcome. Or, do you have a favourite computer program or topic that you would like to share with the group? Send your questions, answers, or the details of what you would like to share to: SuggestionBox@opcug.ca

Everyone is welcome to attend Q&A sessions and to ask questions about their specific computer-related problems. Join us at: <https://tinyurl.com/opcug-meeting> (if you use the Zoom client, the meeting ID is 924 9556 0898 and the password is **opcug**).

OPCUG



Users helping users
for over 40 years