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Taking Control of My Smartphone *by Alan German*

One of the problems I have with Android smartphones is that manufacturers will cheerfully sell me a device but will then allow support for the phone to lapse in relatively short order. My Moto G (3rd Generation) is a case in point. In 2016, the phone was purchased with Android Version 5.0 (Lollipop) installed. Motorola subsequently provided an over-the-air (OTA) update to Android Version 6.0 (Marshmallow). However, by mid-2017, there appears to be no plan to further update the unit to Android Version 7.0 (Nougat) – and beyond!

Now, if this were just a case of not having new features available, it wouldn't be so bad. However, the real problem is that security vulnerabilities are frequently identified in the operating system after support has been terminated. This means that the phone is then susceptible to exploits that take advantage of such security issues.

A somewhat related issue is that, on an Android smartphone, I don't really have control over my device. Phone manufacturers, in their "infinite wisdom", usually provide end users with very limited access to the system and the associated applications. For example, on my phone, a number of system applications are installed by default. Even if I never use them, they take up disk storage space, and they are subject to frequent updates, requiring time to be spent waiting for software downloads and installation. Once again, the manufacturer has decided that I must have this software and, by default, I am not allowed to uninstall such applications.

Even in Windows, one has the ability to login to an administrator's account and so take control of many aspects of a computer's software. (And, if you still can't do what you want, you can boot a Live-CD/USB Linux session which will usually do the trick!) In the mainstream Linux world (which is effectively the basis for Android), the norm is – or should be – that the user can obtain root access and so gain full control of the system. So, how can one take control of one's own smartphone?

For example, suppose I want to update my phone's OS from Marshmallow to Nougat, what do I have to do to achieve this? The answer is pretty simple – I "just" need to unlock the bootloader, backup the current OS, root the phone, and overwrite the phone's firmware by installing a custom ROM.

At one of OPCUG's workshops, one of the suggestions for a future topic was "How to root an Android 'phone.'" This question has always intrigued me, but I have never been brave enough to take on the somewhat complex process. Well, at least, I wasn't brave enough – until now! Since Android Version 8.0 (Oreo) has now been released, I am two versions of the OS behind. It's time to take affirmative action!

In a companion article (to be published shortly), I will outline how to complete the necessary steps to root the Moto G3. However, it's worth noting that there are many articles and video tutorials posted on the web that describe the nuts and bolts of the required processes. These are of variable quality and have vastly different levels of detail. Potentially more problematic is that the information

is frequently out of date, especially since specific details of commands and prompts can change with new versions of software. Nevertheless, it is worthwhile to access a number of such resources. If nothing else, a review of multiple sources will provide a good overview of the steps required, what each process involves, and the means by which each may be undertaken.

So, if you are desperate to find out how to root your phone, stand by for the next article in this series. But, if you are considering actually performing this task on your own smartphone, be aware that there are serious issues associated with the process. For example, unlocking the bootloader of my Moto G3 voided the phone's warranty. Furthermore, Motorola indicates that critical software components have been altered "...in a manner that may cause damage to the device or result in injury to users." So, if any such issues are a concern with respect to your smartphone, perhaps you may wish to reconsider!

Read the next installation in January.

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Next Meeting: **WEDNESDAY, December 13th, 2017**

December Raffle

XTreme HD Dashboard Camera

Drive with confidence knowing that every kilometer you drive will be recorded in HD video. The camera has the ability to record sounds in and out of the car and can snap still pictures in camera mode. It has 6 IR LEDs to enable night vision recording.

Tickets are \$1 for one, \$2 for three, or \$5 for ten.



Coming Up...

NOTE: We are now in the main **Mauril Bélanger Theatre (CASM floor plan: <https://ingeniumcanada.org/aviation/visit/floor-plan.php>).**

➔December 13th, 2017

Speaker: Bob Walker, OPCUG

Topic: Where Are Self-Flying Planes and Self-Driving Cars Taking Us?

In the last few years there has been a lot of news about autonomous vehicles including cars and planes. Find out what's happened up to now and where it's likely to go in the future.

November Prize Winners

Stan Pomeroy was the evening's big winner, taking home the raffle prize (a copy of the Mini Tool Power Data Recovery software) as well as one of the door prizes (one of the few remaining coveted 'Goup' mugs).

The other door prize Mug of the evening went to **Tony Toscano**.

Ottawa Food Bank Donations



At our **December 13th meeting**, we will have a collection box for your non-perishable food donations for the Ottawa Food Bank, and for those who prefer, we'll also accept cash donations that are tax deductible for \$10 or more. With its food industry partnerships and bulk purchasing power, the Ottawa Food Bank turns every \$1 donated into \$5 worth of food.

Visit <http://ottawafoodbank.ca/> to see everything they do to help the hungry in our community.

For meeting updates and additional details, visit <http://opcug.ca> and click on the **MEETINGS** button.

2017 CALENDAR

Meetings	Date	Time and Venue
OPCUG General Meeting	Wednesday, December 13 th	7:30 p.m. Mauril Bélanger Theatre at the Canada Aviation and Space Museum (CASM) , 11 Aviation Parkway. http://casmuseum.techno-science.ca/en/index.php Floor plan: https://ingeniumcanada.org/aviation/visit/floor-plan.php
Q&A Session	Wednesday, December 13 th	Immediately following the OPCUG General Meeting.
Beer BOF (Wing SIG East)	Wednesday, December 13 th	10:00 p.m. (after the Q&A) at Liam Maguire's, St. Laurent Blvd. at Innes Rd.

CLUB LIFE

OPCUG Website Redesign—a brand new look!



by Brigitte Lord, Webmaster

The OPCUG has been hard at work redesigning our tired old website. After decades of the frame-based dinosaur (with a minor redesign around 2005 consisting of a new colour and some graphic buttons), we felt it was time for a fresh look. Without frames, the new website will load better and faster on mobile devices. The graphic buttons were abandoned for simpler text buttons. This means that when zooming in on a page, the buttons will get out of the way instead of being anchored in a left frame and hogging limited screen space.

Design credit goes to our Treasurer, Alan German, who came up with the new look. He presented me with a layout that blew my socks off. The Home page has gained new functionality with a synopsis of the upcoming meeting and a notice that the latest newsletter is available for downloading. The right side of every page features the Google search bar and contextual page material. The Meetings page is also more functional with the upcoming meeting and raffle given prime space on the page.

Many hours were devoted to updating the many pages of our website, with Alan volunteering to update 300 pages of Product Reviews that go back decades! Launch date is early January. Have one last look, while you can, at a relic.

A peek at the new Home page (cropped screenshot)

Did you know?



There is one final Tech Talks session remaining in the series. It will take place on Tuesday, December 12th from 7:30 to 9:00 pm in the Amphitheatre of the Heron Road Community Centre located at 1480 Heron Road, Ottawa.

For full details, see <http://www.opcug.ca/public/workshops/techtalks>



Nominations for OPCUG Board for 2018

Once a year, the OPCUG holds elections for the 9-member Board of Directors. We are once again coming up to this annual event.

We encourage all members to consider running for a board position or getting involved in some other manner in the operations of the OPCUG.

If you want more information about what is involved, please talk to me or any current or past Board member. Names are listed in the Newsletter and on the web site.

Nominations can be submitted to Bob Herres, Election Chair, in person at the October, November and December club meetings or by sending an email to nominations2018@opcug.ca.

Nominations must be received by midnight, December 31, 2017.

Please get involved. Please help the OPCUG continue in its role of Users Helping Users!

Bob Herres
Election Chair 2018

ARTICLE

Re-Using a Hard Drive by Alan German

A friend's laptop died recently. The problem appeared to be with the power supply. The power-on light cycled continuously between lit and unlit, but the machine never booted. (Members who attended a recent Q&A session saw this problem first hand – and the miraculous recovery when the laptop booted when plugged into the wall socket. Regrettably, the miracle didn't last!)

Since the machine was old (it originally came with Windows Vista and was switched over to Linux when Microsoft ended support for Vista), the decision was made to replace the laptop with a new computer.

However, since I suspected that there was nothing wrong with the laptop's hard drive, rather than simply sending the entire machine to E-waste, I decided to re-use the disk as an external USB drive for backups and extra storage.

As with many laptops, it was a simple matter to extract the hard drive. Removing two screws released the back panel covering the drive. Four more screws retained the drive in a metal carrier. Once these were removed, a plastic adapter could be pulled off the drive's connection pins. (See **Figure 1**)

An external USB case was purchased from a local computer store. For the 2.5" drive, a case with a USB 3.0/SATA interface was available for the princely sum of \$12.99.

A really neat feature of today's external drive cases is that they are "tool free". The hard drive easily slides into the case such that the pins on the drive engage the connector built into the case. (Note in **Figure 2** that the drive is upside down to show both the pins on the drive and the connector inside the case.) Once the disk is installed, the case's back cover slides along plastic channels on the side of the case.

Plug in the included USB cable and the "new" external USB drive is ready for action! (See **Figure 3**)



Figure 1 Hard drive removed from old laptop



Figure 2. Hard disk and external USB case



Figure 3. External USB drive complete!

ARTICLE

In pursuit of desktop real estate

by Chris Taylor

When I use my computer, I *never* use a single program. I almost always have my email loaded (Gmail in an app window and Thunderbird for my OPCUG mail), my calendar, at least one web browser, perhaps one or more photo editors, and my file manager – Total Commander. Add to that any number of other programs I might have open multiple times a day and my screen gets really busy.

I have long sought large, high resolution monitors to have as many programs as possible visible at the same time.

Many years ago, I started using multiple monitors, at one point working with 3 monitors running at 1024x768. About 8 years ago, I settled for twin 23" monitors running at 1920x1080. With a total of just over 4.1 million pixels of desktop real estate, things worked well. I could have quite a few programs visible at the same time and used Windows Snap to keep them arranged neatly, using all available desktop space.

In January of this year, a flyer arrived in my mailbox with a good price on a large, wide-screen monitor. And I mean a really wide-screen monitor. It was the LG 34UM58: 34" diagonally, an aspect ratio of 21:9, and a native resolution of 2560x1080. This equates to almost 2.8 million pixels.

Now wait a minute – I already had 4.1 million pixels with my twin 23" monitors running at 1920x1080. Well, I thought there might be some advantages to running everything on a single monitor. Or...

My twin 23" monitors ran off a pair of DVI video connectors. The LG runs off HDMI and my video card also had an HDMI port. Maybe I could run more than just the ultra-wide LG...

At the regular price of \$600, it was a bit much. But at 25% off, I bit the bullet and bought the monitor. I set it up as my only monitor and it looked great. Then I added both 23" monitors. With the 34" ultra-

wide centred on my desk, the 23" monitors hung way off both sides. But the idea of having 6.9 million desktop pixels stretching across over 70 horizontal inches...yum!

And it didn't work.

A bunch of playing around and I discovered that my computer could drive the LG ultra-wide and one 23" monitor, but not both. So that is where things sit now – I have the two monitors with a total of 4,838,400 pixels.

There were a few other benefits I found going to the ultrawide monitor as my main monitor.

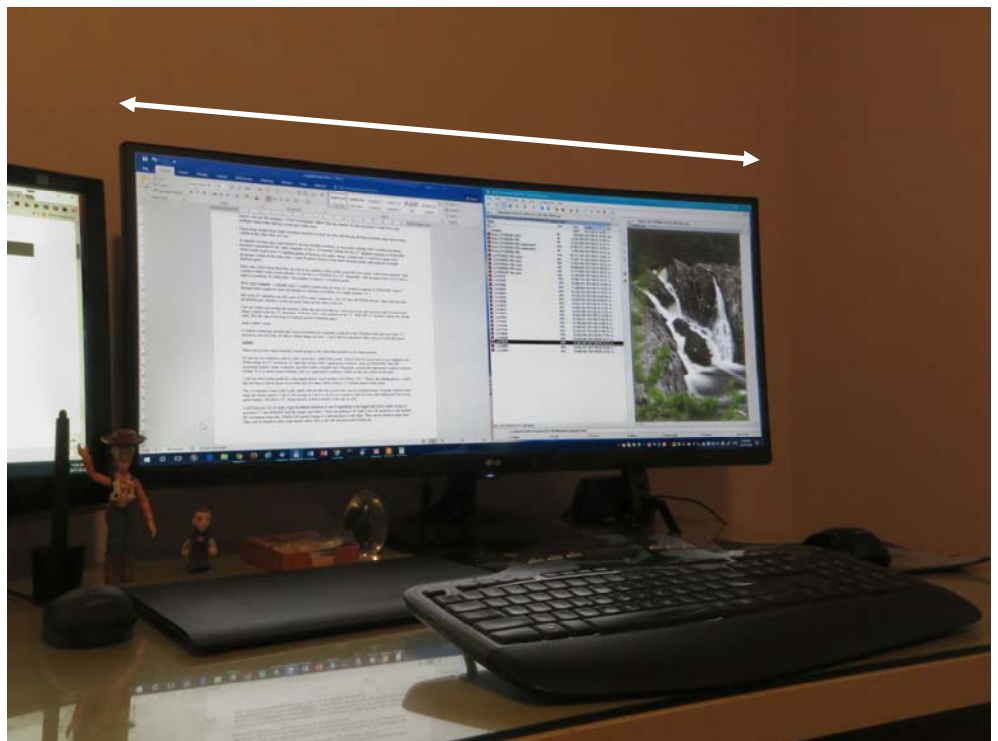
If I put up two windows side-by-side, each gets 1,280x1080 pixels, which I find roomy enough. When using the 23" monitors, if I split the screen with 2 application windows, each got 960x1080. That 960 horizontal pixels, while workable, just felt a little cramped and I frequently maximized application windows because of that. It is so much nicer working with two visible application windows.

I still use full-screen mode for some applications, most notably ON1 Photo 2017. When I am editing photos, I really like having as much space as possible and devoting 100% of those 2.8 million pixels really helps.

The LG monitor came with a nifty utility that divides the screen into various configurations. Program windows then snap into those spaces. I use it, but seeing as I have it set for two windows side-by-side, each taking half the screen, quite frankly, Windows 10's Snap feature would probably work just as well.

I still keep my eye on large, high resolution monitors to see if something even bigger and better comes along at a nice price. I can definitely find bigger and better. There are getting to be quite a few 4K monitors on the market. 4K resolution (typically 3,840x2,160 pixels) brings 8.3 million pixels to the desk. They can be found in large sizes. They can be found in ultra-wide aspect ratios. But so far, the nice price part eludes me.

“And I mean a really wide-screen monitor.”



PRODUCT REVIEW

Shortcuts with Shotcut

by Alan German

A Catalan tradition in Barcelona is for local citizens to dance the Sardana in front of the cathedral around noon on Sundays. I came back from the city with a number of video clips on my digital camera of this dancing. As it happened, I had recorded two particular videos, one a slow section, the other fast, where the dance was being done to the same piece of music. My thought was to combine the two videos by clipping individual segments to provide a more-or-less natural break between the two at the point where the musical tempo changed.

Note, in the stills from the videos, that between the end of the slow section (left image) and the start of the fast section (right), that the camera view has changed somewhat. In addition, the dancers raise their hands above their heads as the faster section of the dance commences. What I needed to combine the two shots was some video editing software that would allow me to clip the videos and join them together with a reasonably seamless transition.



Of course, my first thought was to find a free (and even better – open-source) software package to achieve these goals. My first foray into video editing was using a package recommended in an on-line review. As indicated by the review, the software proved to be quite intuitive, simple to use, and hence seemingly perfect for my neophyte purposes! However, it quickly became apparent that the “free” version of the program was actually a limited-use free trial and so it was not a viable option for the long term.

More research on the Internet identified Microsoft’s Movie Maker as a potential candidate, with a number of glowing reviews of this program’s power and simplicity. Then a further search found that development of this software had been abandoned by Microsoft and the download link discontinued. Sigh.

Two more products proved to be just too difficult to use but, eventually, I came across a review of Shotcut – an open-source, cross-platform, video editor. This package was said to have tremendous power, and lots of video tutorials on-line to provide a reasonably easy learning curve. Now, all of that sounded too good to miss.

Shotcut’s modus operandi isn’t readily apparent just by starting the program. Sure, it’s easy to open a video file – but then what? There is a forest of controls and on-screen options. This is where those on-line video tutorials fit in!



Opening my first video file brought it into the preview area where I could use standard video player controls to view the content. In order to select the video clip that I required I simply had to move the start and end markers, by dragging them horizontally, along the timeline in the preview area (top-right of the program’s window). A frame counter, with forward and back arrows, enables any single frame to be identified and displayed, making it fairly easy to set up the clip length exactly.

Once I had my clip selected, I pressed the Copy icon in the menu of the timeline window at the bottom of the screen, followed by the Paste icon, in order to place a copy of the selected clip into the edit area (the lower portion of the program’s window). I then opened the second video file and repeated the process to produce a second clip in the edit area, to the right of the first clip.

By default, the two clips are placed immediately adjacent to each other. To create a transition, I simply had to drag the second video clip to the left so that it overlapped the first video clip. The minimum amount of overlap that I seemed able to create (about 30 frames, or one second of playback) seemed to give a fairly smooth transition. No doubt professional video editors would wince at this methodology but, what the heck, this is my video, and it’s my first ever video edit!

By default, the edited product has the same properties – video format (e.g. MP4), resolution (640x480 px), and frame rate (30 fps) – as the original video files from the camera. However, a vast array of options for exporting the video with different parameters is supported by Shotcut. For my purposes, simply selecting Save, browsing to a folder on my hard drive, and creating a new file name allowed me to safely store my newly-created masterpiece!

Working on some other videos with Shotcut, I found the above-noted process to be ideal for simple cropping of video files. This allowed me to eliminate the frequent shaky start to videos, presumably as a result of pressing down rapidly, and much too hard, on the camera’s Record button. Similarly, I found combining clips with a smooth transition to be ideal for instances

(Continued on page 8)

OPCUG Free Software Guide—Part 77

Compiled by Alan German

This guide features an annotated list of free computer programs. The software mentioned has not been reviewed (except where noted) nor have any tests necessarily been conducted. Consequently, no guarantees are provided that the individual programs will perform as described. Rather the list of available software is provided for the information of our members who may find one or more of the programs useful.

SpywareBlaster

Spyware, adware, browser hijackers, and dialers are some of the most annoying and pervasive threats on the Internet today. The most important step you can take is to secure your system. This is a powerful tool to help you do so.

Current Release: Version 5.6

Web Site: <https://www.brightfort.com/spywareblaster.html>



BurnAware

This easy-to-use burning software writes all types of files such as digital photos, documents, music and videos, to CD's, DVD's, and Blu-ray disks. You will also be able to create bootable or multi-session discs, make or burn ISO images, verify disks, and display details of disks and drives.

Current Release: Version 10.5

Web Site: <http://www.burnaware.com>

BulkFileChanger

Need to change the date-time stamps on multiple files? This little utility will let you modify any of the created, modified, or accessed times of selected files. You can also change file attributes (e.g. read only, hidden, and system).

Current Release: Version 1.50

Web Site: http://www.nirsoft.net/utills/bulk_file_changer.html

Technitium MAC Address Changer

Have you configured your router to block all devices except those with specific MAC addresses? This utility will let you change the MAC address of a device to one that you haven't configured. You can then check your security setup by seeing if the device is now blocked.

Current Release: Version 6.0.7

Web Site: <https://technitium.com/tmac/>

KDiff3

A multi-platform, open-source tool that compares or merges two (or even three!) text input files, shows the differences line by line, and character by character, all highlighted in bright colors, and provides an automatic merge-facility. Runs on Windows, Linux, and Mac OS.

Current Release: Version 0.9.98

Web Site: <http://kdiff3.sourceforge.net/>

DuckCapture

This screen-capture utility comes with four capture modes that make grabbing a screen image easy. Capture a window on the screen, a specific region, the contents of a tall web page that scrolls, or the full screen. You can easily edit, and share a screenshot.

Current Release: Version 2.7

Web Site: <http://www.ducklink.com/p/free-screen-capture-tool/>



JDownloader

An open-source download management tool that makes downloading as easy and fast as it should be. Users can start, stop or pause downloads, set bandwidth limitations, auto-extract archives and much more.

Current Release: Version 2 Beta

Web Site: <http://jdownloader.org/>

Blacklight: Retribution

Wage war with advanced weapons and technology in this free-to-play, futuristic first-person shooter. Deploy devastating armored exo-skeletons and utilize lethal hand-held weapons in vicious competitive modes. Your kind of fun?

Web Site: <http://tinyurl.com/mcdxjmm>



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.

Group Meetings

OPCUG meets on the second Wednesday in the month, except July and August, in the main **Mauril Bélanger Theatre** of the **Canada Aviation and Space Museum**, 11 Aviation Parkway, Ottawa. <http://casmuseum.techno-science.ca/en/index.php>

Museum floor plan: <https://ingeniumcanada.org/aviation/visit/floor-plan.php>

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

Parking is available at the museum for a flat fee of \$3 after 5pm.

Details at <http://opcug.ca/public/regmtg.htm>

OPCUG Membership Fees: \$25 per year
Mailing Address: 3 Thatcher St., Nepean, Ontario, K2G 1S6
Web address: <http://opcug.ca>
Bulletin board—The PUB (BBS) <http://opcug.ca/default.htm>
Follow us on Facebook: <https://www.facebook.com/opcug>
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President and System Administrator		
Chris Taylor	chris.taylor@opcug.ca	613-727-5453
Meeting Coordinator		
Jeff Dubois	meetings@opcug.ca	
Treasurer		
Alan German	alan.german@opcug.ca	
Secretary		
Gail Eagen	gail.eagen@opcug.ca	
Membership Chairman		
Mark Cayer	mark.cayer@opcug.ca	613-823-0354
Newsletter		
Brigitte Lord (editor/layout/e-distribution)	brigitte@opcug.ca	
Public Relations		
Jeff Dubois	PR@opcug.ca	613-366-7936
Facilities		
Bob Walker		613-489-2084
Webmaster		
Brigitte Lord	opcug-webmaster2@opcug.ca	
Privacy Director		
Wayne Houston	privacy2@opcug.ca	
Special Events Coordinator		
(Mr.) Jocelyn Doire	jocelyn.doire@opcug.ca	

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Shotcut *(Continued from page 6)*

where, in my non-videographer's wisdom, I had zoomed the telephoto feature of the camera's lens during a recording, resulting in transitional footage that was both shaky and out of focus. The fix was simple – copy clips from both before and after the zoom sequence and merge. The edited product looked almost professional by comparison with the original!

No doubt, if the Internet reviews are borne out, Shotcut has a myriad of other features, both simple and advanced, that will allow users to create superb videos. For my part, I'm just happy that fairly simple techniques can produce vastly improved footage for a rank amateur.

Bottom Line

Shotcut (Open-source)
 Version 17.06.01
 Melytech, LLC
<https://www.shotcutapp.com/>

Reduce, Reuse, Recycle

Bring your old computer books, software, hardware, and paraphernalia you want to GIVE AWAY to the General Meetings, and leave them at the table near the auditorium's entrance. Please limit magazines to publication dates under two years.

You may TAKE AWAY any items of use to you.

Any items left over at the end of the meeting have to be taken back home by those who brought them in.

