TAKING CONTROL OF MY SMARTPHONE (Disabling System Apps)   *by Alan German*

One of the things that attracted me to having a rooted smartphone was the prospect of being able to get rid of bloatware – notably those system apps that are installed by default, but which, as a regular user, I am not allowed to delete. Not only do these take up space in the internal memory (which is always in short supply), but the relatively frequent updates require considerable time and patience for downloading and installing software that I never use. Rooting promised to change all that.

However, while it is possible to uninstall system apps from a rooted phone, there are potential downsides to such a "drastic" course of action. One possibility is that removing a particular system app may cause other apps to malfunction. Web postings also suggest that, for certain devices (manufacturers), if an app is removed, it may not be possible to obtain the software to re-install the app should one subsequently wish to do so.

So, how can we avoid such pitfalls? Well, there is a more moderate option available – one which is readily available to owners of non-rooted phones – one can simply disable system apps. While this isn't as comprehensive a solution as completely uninstalling an app, it does still offer significant benefits.

This feature is reported to be available in Android 4.1 or above. Note, however, that disabling a system app doesn't remove it completely from your phone. It will remove any installed updates, but the base software for the app remains stored in the phone's memory. What it does do is prevent the app from running (e.g. in the background), and from receiving any future updates. And, because the disabled app is still stored on the phone, it can easily be re-enabled should you wish to do so.

As with many Android operations, the prompts that occur during the process of disabling a system app are not particularly clear. For example, I have no need for the Google Japanese Input app since I never do – and probably never will – write Japanese characters. The process to disable this app is as follows:

(1) Navigate to Settings – Apps – Google Japanese Input.

(2) Select the Google Japanese Input app and press the DISABLE button.

(3) Ignore the warning message ("If you disable this app, other apps may no longer function as intended") and press the DISABLE APP button. [*Ignore this warning at your peril – of course! But remember – you can always enable a disabled app, so that should fix any problems – shouldn't it?]*

(4) Now the strange message: "Do you want to replace this app with the factory version?" The answer really is – No, I want to delete this app completely – but the only real option is to press OK. Reading between the lines, I think the prompt really means: Do you want to remove any installed updates, and return the app to factory-fresh condition? In any case, the system indicates that it is "Uninstalling", then goes back to the app screen, where the DISABLE button has now become ENABLE. So, it hasn't really uninstalled the app; it may have uninstalled some updates, but what it has done is disable the app (as the button promised).

(5) Hit the back arrow to return to the previous screen where Google Japanese Input is now flagged as "Disabled".

So, we have now disabled the app. In doing so, we have minimized its footprint in memory (i.e. have removed any installed updates), have prevented it from running and taking up resources, and have stopped it calling for future updates. But, if we ever want the app back, we simply have to enable it (i.e. Settings – Apps – Google Japanese Input – ENABLE).

Initially, I spent some time with my rooted phone and various apps (e.g. Titanium Backup, Amaze File Manager) that used the root access to remove certain system apps entirely. However, I found that there weren't huge savings in disk storage to be had from this process over those obtained by simply disabling the same system apps. So, when I installed a custom ROM, with an updated version of the Android operating system, and the associated Gapps (Google applications), rather than once more going through the somewhat tedious process of deleting various system apps, I simply disabled them.

So, while there are specific benefits to rooting a smartphone, in my view, the ability to remove system "bloatware" isn't one of them. It's much more efficient to just disable unwanted system apps. And, the beauty of this process for regular smartphone users is that this technique works on unrooted phones!

Look for more on this series next month.

Inside this issue:

Next Meeting: WEDNESDAY, April 11th, 2018

April Raffle

This month's raffle prize is the **Case Logic LoDo Satchel**.

The thickly padded laptop compartment fits laptop with up to 15" screen size. Also includes a protective space for a 10" tablet. The unique wide-mouth opening provides easy access and visibility to gear. It has a cotton canvas exterior with leather-wrapped handles and zipper pulls and an adjustable shoulder strap. Two easy-access external accessory pockets have magnetic snap-closure. The removable shoulder strap adjusts for a custom fit. Two interior pockets keep your gear neat and there are two exterior water bottle pockets.

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

March Prize Winner

The winner of our raffle prize, an XtremeAudio Pod Bluetooth Mini Round Speaker, was **Richard Aylesworth**.

Coming Up…

*Our meetings are still at the **Canada Aviation & Space Museum** .*

Wednesday, April 11, 2018

Speakers: Art Hunter and Stewart Dibbs
Topic: Ottawa Microgrid

This home microgrid generates and stores electrical energy, sells energy to the grid while storing and using geothermal energy. This presentation will briefly describe the project with emphasis on displays and energy flow control. Art Hunter will describe the project and what needs to be controlled and Stewart Dibbs will describe the control system, display, and the monitoring with links into Raspberry Pi3 platforms.

A live demonstration of the sensor and display technology and the controller is planned.

Art Hunter PhD and PC owner since 1984 has spoken to the OPCUG in the past on his energy freedom project. Now his project has 3 Tesla Powerwall 2 batteries, an Electric Vehicle, microFIT solar, Net Metering Solar and a control room. Geothermal installation is scheduled for April 2018.

Stewart DIBBS is a Computer Science graduate of Macquarie University (Australia) and principal at PiXCL Automation Technologies in Gatineau. His experience includes product development with interpreted languages and compilers, imaging photometers, video, device drivers, USB sensor/control/LCD and LoRaWAN devices for Internet of Things applications.

Wednesday, May 9, 2018 *(details TBA)*

Wednesday, June 13, 2018
Annual Pizza Night and eWaste Event, plus a presentation afterward (*TBA*)

For meeting updates and additional details, visit http://opcug.ca/meetings.

2018 CALENDAR		
Meetings	**Date**	**Time and Venue**
OPCUG General Meeting	Wednesday, April 11th	7:30 p.m. in the main **Mauril Bélanger Theatre** of the **Canada Aviation and Space Museum**, 11 Aviation Parkway. http://casmuseum.techno-science.ca/en/index.php
Q&A Session	Wednesday, April 11th	Immediately following the OPCUG General Meeting.
Beer BOF (Wing SIG East)	Wednesday, April 11th	10:00 p.m. (after the Q&A) at Liam Maguire's, Southeast corner of St. Laurent Blvd. and Innes Rd.

CLUB LIFE

End of an era: June newsletter will be last printed issue

June will be the last time the Ottawa PC News is put in print, a move the BOD has delayed for the last few years. With print shop and mailing costs in 2017 reaching almost $1400 (and being almost double that of any other regular expense item), we could no longer justify the expense. We are, after all, a computer club and all our members are capable of viewing the electronic version on various devices or even printing it themselves. And being a not-for-profit organization, we strive to keep low our expenses and your membership fees.

You will find instructions on how to subscribe to the electronic version of the newsletter on the back cover of this issue. The PDF newsletter is also available on the Home page and in the Newsletters section of our website (http://opcug.ca/).

You will need a product capable of opening a **.pdf** file such as Adobe Reader (or perhaps another PDF viewer with fewer security vulnerabilities). A review of PDF-Xchange Viewer was written by one of our members and can be read at http://opcug.ca/public/Reviews/PDFXchangeViewer.htm. There is even a PDF viewer for Android: http://opcug.ca/public/Reviews/MuPDF.htm. There are other PDF readers and a simple search on Google can help you find one. Both Adobe Reader and PDF-Xchange Viewer are free products and can be downloaded from these sites:

Adobe Reader: https://acrobat.adobe.com/ca/en/acrobat/pdf-reader.html
PDF-Xchange Viewer: https://www.tracker-software.com/product/pdf-xchange-viewer

There are hundreds of issues of our newsletter in PDF format dating back to 1984 and all but a few can be found in the Newsletters section of our website at http://opcug.ca/newsletter. For at least 20 years these have been available in full colour, something that was never reproduced in print. The electronic version features email and website hyperlinks (no more typing these out!) and is distributed much sooner than the printed one, sometimes two weeks earlier.

You will still see printed newsletters at the general meetings, but starting in September, only ten or so will be printed each month on a printer owned by the club. These will preferably be for visitors and newcomers.

Thank you.

Brigitte Lord
Newsletter Editor, Ottawa PC News

OPCUG not moving back to Canada Science & Technology Museum

At the OPCUG March meeting we announced that we may be returning to the Canada Science & Technology Museum in April. This will NOT be the case. We expect to continue at the Canada Aviation & Space Museum for our April, May and June meetings.

Bob Walker
Facilities Coordinator

Last Call!

Do you know someone who needs a little help with their computer? Have them register for our **Beginners' Workshop** which will be held on **Saturday, April 21, 2018** (10:15 am to 4:45 pm) at the Orleans branch of the Ottawa Public Library. They will learn about file management, free software, word processors, spreadsheets, and computer security – all for just $20.00!

Full details at: http://opcug.ca/workshop

Review of OPCUG 2017 Financial Records *by Richard Aylesworth*

I reviewed the Treasurer's financial records for the year 2017, and found them to be in good shape. The dollar amounts agree with those in the Treasurer's financial report submitted to the board.

There were a few minor errors with the reporting of some transactions. These were dealt with to my satisfaction by the Treasurer.

Thanks to Alan German for a job well done.

Richard Aylesworth,
March 2018

The Board of Directors would like to thank Richard for his thorough review of the club's accounts.

ARTICLE

Controlled folder access   *by Chris Taylor*

I tend to be a little paranoid about computer security. But as the adage goes – just because you're paranoid doesn't mean they're not out to get you. One of the most significant threats is file encrypting malware which will encrypt your data files and then demand a hefty fee for the decryption key.

The best defence is a good backup, which I certainly have. But my main backup drive is connected to my computer 24x7 so automated backups can run every night. If I get hit with file encrypting malware, my backup images might also be encrypted, rendering them useless. Of course, I could then go to my off-site backup, but it might be as much as a month old.

When I changed backup software last year, I happened across a potential solution. Paragon Backup & Recovery has the ability to save backup images to a hidden partition where, presumably, encrypting malware can't find them. But there were other aspects of the software I didn't like, so I never switched to it.

On October 17th, Microsoft released the *Fall Creators Update* for Windows 10 with a new feature called *Controlled folder access*. Or as I will refer to it – CFA. It has the promise of preventing encrypting malware from modifying my backup files. In short, it only allows specific programs to modify files stored in specific locations.

Off by default, you have to dig deep to turn CFA on. Run *Windows Defender Security Center* and navigate to *Virus & threat protection | Virus & threat protection settings | Controlled folder access*, where you will find a slider to turn it on. When you turn it on, only allowed programs will be able to modify files in any of the following locations; *Documents*, *Pictures*, *Videos*, *Music*, *Desktop* (all five locations both public and private), and *Favourites*.
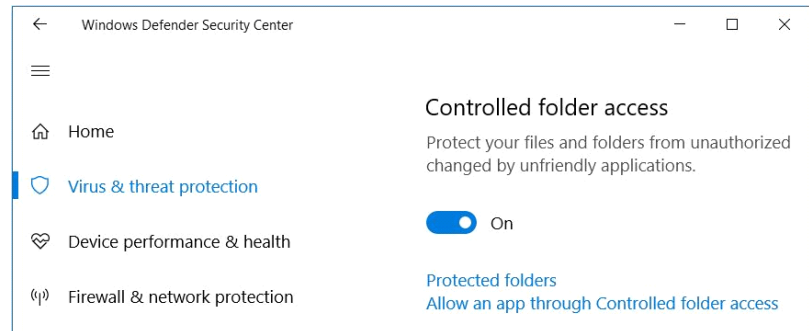
You can modify the way the feature acts in two ways; by adding protected folders, and by adding programs to the white list so they can modify protected folders.

Modifying the list of protected folders

In *Windows Defender Security Center* as noted above, click *Protected folders* to add new locations. In my aim to prevent malware from modifying my backup files, I added *s:\backups* and *s:\backups-old* to the list of protected folders.

You cannot remove any of the default locations from the list of protected folders. And that's my first complaint about CFA. My main need is to protect my backup files. If my *Documents* folder gets encrypted, as long as I can access my backups, I can recover the files I need quite easily. Plus, I just like having complete control. I have no qualms about the default list being, well, the *default*. But I don't believe it should be mandatory to include all those folders just to use the feature.

Whitelisting programs

You can add to the list of programs permitted to modify items in protected folders by clicking on *Allow an app through Controlled folder access*. And so begins my second complaint about CFA.

Microsoft says "By default, Windows adds apps that it considers friendly to the allowed list - apps added automatically by Windows are not recorded in the list shown in the Windows Defender Security Center app or by using the associated PowerShell cmdlets. You shouldn't need to add most apps. Only add apps if they are being blocked and you can verify their trustworthiness."

Hmmm… a couple of things there, Microsoft. First, while I *hope* the list is carefully vetted, when it comes to security, obscurity is never the best approach. I would like some way to know what "apps" (I presume Microsoft is actually talking "applications" and not "apps" in the sense of the Windows Store apps) are permitted to modify protected folders. Second, when they assert that "you shouldn't need to add most apps", they didn't check with me. I found that a very long list of programs I have installed were suddenly blocked from making modifications to protected folders, including EaseUS Todo Backup, Textpad, ON1 Photo RAW, Google Picasa, Total Commander, PhotoPad, Google Chrome, Microsoft Digital Image, DxO Optics Pro, Corel Paintshop Pro, and PhotoScape.

After a reboot, I had a flurry of programs that were blocked from making changes to protected folders. I was surprised by many of these. Especially the first two, given that "Windows adds apps that it considers friendly to the allowed list." The folder they were blocked from modifying is in parenthesis;

C:\Windows\explorer.exe (Favorites)
C:\Program…\iexplore.exe (Favourites)
C:\...\AdobeGCClient.ex… (%userpro…
\adobegc_a03784)
C:\Prog…\thunderbird.exe (Desktop)
C:\pro…\SnagitEditor.exe (Documents)
C:\...\OnScreen Control… (Documents)

I don't mind that most programs on my computer are blocked by default. I prefer that I make the decision as to what programs can make modifications to protected folders.

But that brings me to my third complaint about CFA. While you can whitelist any program, Microsoft made it maddeningly difficult.

When a non-permitted program tries to modify a protected folder, a pop-up tells you it was blocked. If you want the program to be able to modify protected folders, you need to navigate to the exact location of the program. So, it might be nice if the pop-up gave you the full path, rather than a severely abbreviated version such as *C:\...\OnScreen Control...* or *C:\...\ON1 Photo RAW 20...*

You have to hunt more than should be needed. And what's with *%userprofile%* in the pathname? Would it be so difficult to show the profile name (in my case *CTaylor*)?

That leads me to my fourth complaint about CFA. According to Microsoft, when you add an app; "Only the app in that location will be permitted access to the protected folders - if the app (with the same name) is located in a different location, then it will not be added to the whitelist and may be blocked by Controlled folder access." This set off alarm bells! Was the blocking of apps actually based *solely* on the name and location of the program?

To test, I put two simple, single file programs (a text editor and a photo filter program) in the same folder. I verified both were blocked from modifying protected folders. I unblocked the photo

filter program and verified it was able to write to a protected folder. I then renamed the text editor to the same name as the photo filter program, ran it, and tried writing to a protected folder. To my dismay, it worked. I think this is truly bizarre. Wouldn't it make sense that CFA would *not* permit a rogue app to run just because its name and location match something you decided to permit?

There is one thing about the way CFA works that I am undecided on. The lists of protected folders and whitelisted programs are global to all user account on the computer. I am not sure if I think this should be applied on a user-by-user basis or not. My initial gut feeling is that global is appropriate. But I am guessing there are probably use cases where a different set of protected folders or a different set of whitelisted programs for different users would make sense.

Microsoft is quite opaque when it comes to explaining some aspects about how CFA functions. Strictly speaking, it does appear to work, with the caveat that it may not be protecting your computer exactly the way you might think it is working. It certainly behaves differently than my expectations.

What's needed in CFA?
First, you should be able to remove default folders. As well, you should be able to include a high-level folder and exclude some folders under it. You should have complete control over which folders are protected.
Second, rather than allowing all programs on the exception list to modify

all protected folders, allow the user to decide which programs can modify which protected folders. If I could, I would permit only my backup program and file manager to modify the folder where my backup images are stored. Third, make it far easier to add to the list of programs that can make changes to protected folders. Allow you to see a list of installed programs and add any with a click. A pop-up notification about a program block should include whether the program is digitally signed and allow you to see certificate details. A button in the pop-up should add the app to the whitelist with a single click. The complete path to the blocked program should always be displayed. Fourth, programs should not be permitted to modify protected folders simply based on a filename and location. When you decide to whitelist a program, *only* that exact program should be whitelisted. This could be done by taking a hash of the executable.
I hope the rough edges in *Controlled folder access* will be fixed. CFA is a very nice concept but the current implementation is problematic.

As a final note, I did see an indication in a Microsoft document that leads me to believe the entire CFA function only works if you are using Windows Defender for real-time malware protection. In other words, it may not function if you use third-party anti-malware. I use Windows Defender as my real-time anti-malware and don't want to go to the trouble of installing a third party anti-malware program just to test this.

◆◆◆
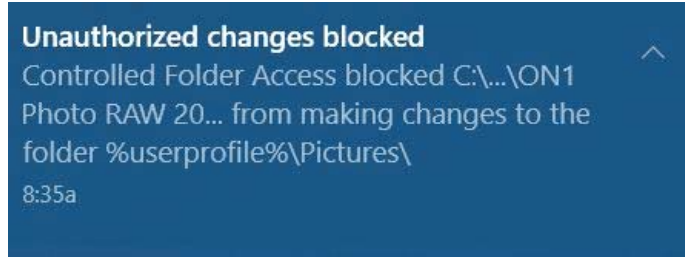
File transfer using Dropbox

by Alan German

Transferring a big file such as a video, or several large files such as digital photographs from modern, high-resolution cameras, can be problematic as many mail servers won't allow large attachments. A simple workaround is to use the cloud – on-line disk storage – to temporarily store your files and allow others to access them.

One such system is Dropbox (https://www.dropbox.com/). A free account will provide you with 2 GB of on-line disk storage. While this is normally quite sufficient for most home users (remember we mentioned the idea of "temporary" file storage?), for those who need more space, a number of plans are available, with monthly billing, to provide increased capacity.

Using the free account is pretty simple. Your personal file storage area in the cloud is protected by requiring the entry of logon credentials – an E-mail address and a password – that you provide when you set up your account.

Once you are logged on, you can create a folder, upload a file, and you are ready to share this file with the world. Well, rather than sharing the file with the whole world, it's more likely that you want to restrict access to one person, or perhaps a small group of people. There are several ways to do this.

If you navigate to a Dropbox folder, and hover the mouse over a file name, a "Share" button will be displayed on the right side of the highlighted file information. Clicking on this button brings up a dialogue box. You can simply enter someone's E-mail address, plus an optional message, and press the blue "Share" button. Your contact will receive a message inviting them to view the file on Dropbox's server.

The second method is to create a link to the file which you can then share with other people. As noted above, selecting a file in a Dropbox folder produces dialogue box. One of the options in this box is "Create a link". When you click on this option, Dropbox creates a hyperlink (URL) to this specific file. A new option to "Copy link" is then displayed next to a line of text that reads: "Anyone with the link can view this file". Clicking on this option copies the link to the clipboard from where it may be pasted into an E-mail message. Because the link is rather cryptic – basically a meaningless alphanumeric string – only people to whom you provide the link will be able to view the file.

Another method allows you to share not only a single file in a Dropbox folder, but the folder itself, with all of the included files. Going to the main menu (by clicking on the "Files" option) displays a list of the folders in your Dropbox account. Hovering the mouse over any specific folder once again produces a "Share" button, this time for the whole folder. The main options are as noted above – simply share the folder by sending a message to someone, or create a link to the folder that can be cut and pasted into an E-mail message.

Now, however, we have a new possibility. By default, anyone with whom we share the folder will receive "Can edit" authorization. Such individuals will be able to view, edit, comment on, or delete files in the folder. They will also be able to add (upload) files to the folder.

This is useful if, for example, we wish to work collaboratively with someone on a Word document. Our contact can edit the draft document and save the modified file back to the Dropbox folder. Similarly, we could upload a number of photographs from a trip, and share the folder with another person (or group of people) who were on the same trip. Because those invited to share the folder have "Can edit" privileges, they are able to upload their photographs of the same event to the Dropbox folder. In this way, two individuals, or a whole group can share all of the photographs taken on the trip.

The alternative to "Can edit" for a shared folder is "Can view". If you opt for this setting then anyone with whom you share the folder can view, download, or comment on any of the files in your folder. However, they are not allowed to make any modifications to the files in your Dropbox account. Similarly, they cannot delete any of your files, nor can they add any new files.

We should also note that Dropbox can be accessed either directly on the Internet, by logging on to the web site using a browser, or by using "always-on" client software installed on your computer. Downloading and installing the Dropbox client provides a "mirror" of the files and folders in your Dropbox account in the cloud to a "Dropbox" folder on the hard drive of your computer.

Better yet, Dropbox will automatically synchronize the two file systems. It will upload any new or modified files in the local set of Dropbox folders to Dropbox's web server, and will download any such files from the cloud to your computer. Similarly, any files that have been deleted from either the cloud or the local hard drive will also be deleted from the counterpart. All of the files and folders on your hard drive are automatically maintained in sync with their cousins in the cloud.

So, we can see that Dropbox offers a variety of options for sharing files and folders through the cloud. The free account has restricted storage, but the 2 GB that is available is pretty generous for most purposes. And, as noted above, files and folders can always be deleted once they have been transferred to another individual, thus creating free space for additional file sharing.

Finally, it might be worth noting for some users that Dropbox is a multi-platform application. You can use Dropbox on Windows, Linux, Android and iOS.

Bottom Line:

Dropbox, Inc.
https://www.dropbox.com
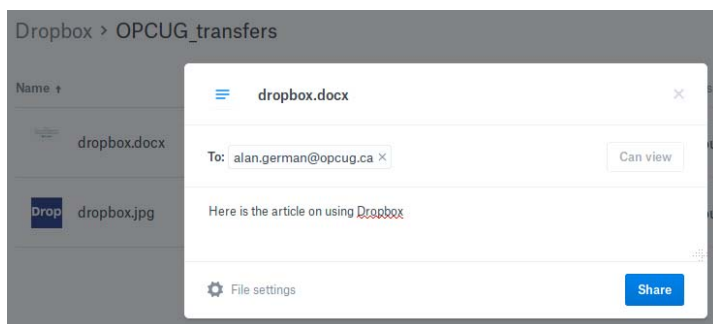
OPCUG Free Software Guide—Part 80
Compiled by Alan German and Chris Taylor

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.

Gaia GPS: Hiking Maps, Topo Maps, Hike App

Record tracks, waypoints, and take geo-tagged photos on your Android smartphone while you are hiking, mountain biking, cycling, off-roading, or wish to map any other outdoor pursuit. Gaia GPS provides a complete GPS toolkit, including allowing customization of the coordinate system that you use, and the ability to import and export GPX and KML files.
Current Release: Version 7.0.5
Web Site: https://tinyurl.com/chcnodh

XMeters
A system tray utility that displays metrics for CPU, storage, network, and memory performance. Each metric can be displayed in either text or chart (bar or pie) form. This utility is a very handy way of watching for bottlenecks, while using very low CPU and memory resources.
Current release: Version 1.0.101.0
Web site: https://entropy6.com

Directory List & Print
Easily list and print folders with lots of export options such as name, path, any date stamp (created/modified/accessed), size in bytes/KB/MB/GB. Output to the clipboard, a plain text file, Word, or Excel. Available as an installable or "portable" version that can be run without installation (great to have on a flash drive for use on any computer.)
Web Site: https://tinyurl.com/y8g8mt4w

FreeFileSync
Use this folder comparison and synchronization software to manage backup copies of all your important files. Instead of copying every file every time, FreeFileSync determines the differences between a source and a target folder and transfers only the minimum amount of data needed.
Previously Reviewed: File and Folder Synchronization Revisited, Alan German, https://tinyurl.com/y9dyjpmu
Current Release: Version 9.8
Web Site: https://www.freefilesync.org/

S10 RedEyes
Fix red eyes in your digital photos easily with this sophisticated red-eye removal tool that also functions as a general-purpose photo editor. The program developers state that "S10 RedEyes is easier to use, produces a more natural look, and provides better control than most programs on the market."
Current Release: Version 3.2
Web Site: http://www.s10soft.com/redeyes.htm

MiniTool Partition Wizard Free Edition
Take control of your hard disk with this partition manager which is designed to optimize disk usage and protect your data. Use it to resize your disk partitions, copy disks, scan for lost partitions, and migrate your operating system from a hard disk to an SSD. All of these tasks can be done easily and safely.
Current Release: Version 10.2
Web Site: https://tinyurl.com/huf952f

digiKam
An advanced open-source digital photo management application that runs on Windows, Linux, and MacOS. The application provides a comprehensive set of tools for importing, managing, editing, and sharing digital photographs and raw image files.
Current Release: Version 5.7.0
Web Site: https://www.digikam.org
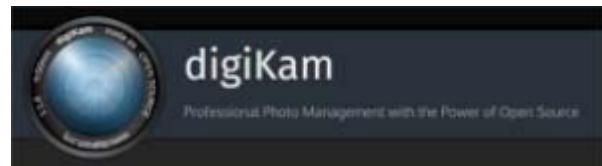
WinX DVD Ripper Free Edition
This free, ripping software will help you to copy DVD content to your hard drive for better protection and longer storage. The utility supports MP4, AVI, WMV, FLV, MOV, MPEG, H.264, and MP3 file formats.
Web Site: https://www.winxdvd.com/dvd-ripper/

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
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 $4 after 5pm.
Details at http://opcug.ca/meetings

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To subscribe to the **Announcements List**, e-mail **listserve@opcug.ca**. Leave the subject blank and in the body of the message type: **subscribe announcements**

Within a couple of minutes you will receive a confirmation message from the listserver.

"Announcements" is a low volume list that the Board of Directors uses to get in touch with the membership. Subscribers can expect at least one message per month – the meeting reminder that goes out a few days in advance of the general meeting. Other than that, the only time it is used is when the Board feels there is some important news that should be brought to the attention of all members.