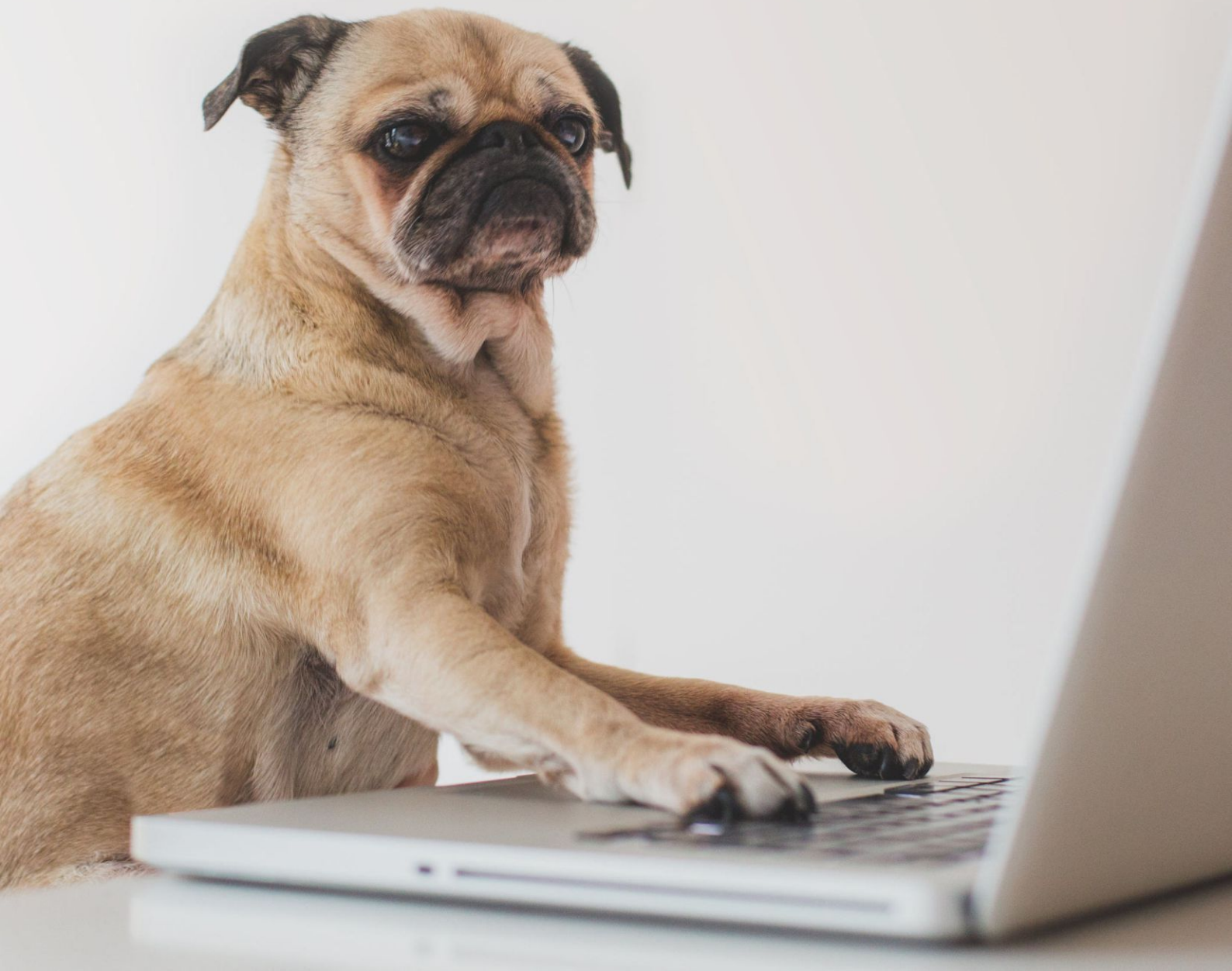# > PC_Update

April 2022

MELB PC USER GROUP

From the president (and editor)

David Stonier-Gibson

Zooming into the future

While we still live in the shadow of Covid, there are clear signs we are emerging back into the world. But it will be a different world. Within Melb PC, while I am encouraging personal attendance and, very importantly, socialising at monthly meetings, it is quite clear that Zoom is here with us to stay. So in future we can expect more hybrid meetings and events.

One SIG, Casey, has decided to switch to Zoom only meetings in future. That is motivated by declining attendances as members age and become reluctant to drive very far. Switching to Zoom may encourage those "very mature" members to engage more. I do believe that right here and now social engagement is important for our mental well-being, even if it is via Zoom rather than face to face.

Because of this, and inspired by this, I will see what I can do to make Zoom links to all SIGs that use Zoom available in one convenient place to all club members. As a Melb PC member you are entitled to attend all SIGs.

Reaching out to young and not so young

Moorabbin is seeing some significant action on two fronts. The Coder Dojo initiative has moved to weekly sessions, at 2pm on Saturdays. It is for young people, up to early teens, with programming and related tech activities in a very relaxed, informal setting.

On Wednesdays from about 11am to 3pm we have BeConnected, a program for helping seniors with their "devices" As more and more of everyday life depends on a phone, tablet or even laptop as an access tool, some older people find it challenging. BeConnected seeks to address this. It is open to everyone, not just MelbPC members, and is funded by a $2,500 grant we received from government sources. Just rock up, "device" in hand and ask your questions.

May monthly meeting special guest

Our monthly meeting for May is on Wednesday 4th at 7pm. This will be held as a hybrid. You are encouraged to attend at Moorabbin in person, or if you'd rather stay home you can attend via Zoom at https://us06web.zoom.us/meeting/register/tJIsd-ytrT0jGt23IJPecpt8qWa7XBHiOcno. The meeting starts at 7pm sharp, so please allow time to get settled in beforehand.

Our guest this time is Professor Veena Sahajwalla from the Centre for Sustainable Materials Research and Technology (SMaRT) at the University of New South Wales. You may very well have seen her on TV, featuring in ABC's Catalyst program.

Professor Veena Sahajwalla is an internationally recognised materials scientist, engineer, and inventor revolutionising recycling science. She is renowned for pioneering the high temperature transformation of waste in the production of a new generation of 'green materials' at the UNSW Sustainable Materials Research and Technology (SMaRT) Centre, where she is Founding Director. Professor Veena is the inventor of polymer injection technology, known as green steel, an eco-friendly process for using recycled tyres in steel production. In 2018, Veena launched the world's first e-waste MICROfactorie[TM] and in 2019 she launched her plastics and Green Ceramics MICROfactories[TM], a recycling technology breakthrough. Veena is the director of the ARC Industrial Transformation Research Hub for 'microrecycling', a leading national research centre that works in collaboration with industry to ensure new recycling science is translated into real world environmental and economic benefits. Professor Veena has also been appointed hub leader of the national NESP Sustainable Communities and Waste Hub. In 2021, Professor Veena featured in the ABC's Australian Story and named the 2022 NSW Australian of the Year.

Note: Prof Veena has requested that we not publish the video of this conversation.

For the rest of the meeting will will have a brief president's report, an iHelp segment, and then break for a raffle and an extended socialising period, BYO drinks and snacks.

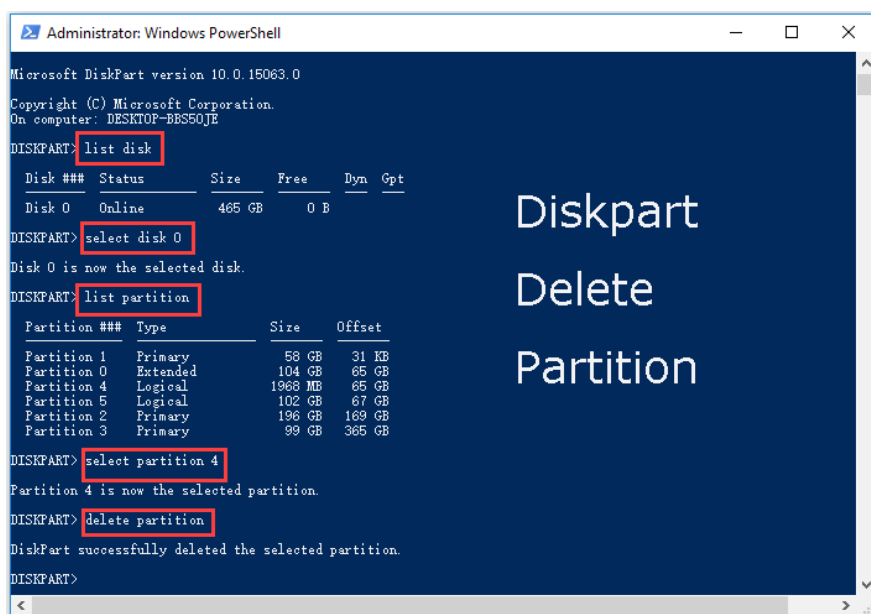
East SIG Report March 2022

Neil Muller

Host Paul Woolard opened the March meeting, again from home via Zoom. The first presentation of the night was by **George Skarbek** presenting his usual Q&A segment.

Q.   I have a hard drive with 5 partitions on it and I want to delete one of the partitions. One partition is called C, another D, a third is called Recovery and 2 are unnamed. I've tried to remove the D partition using Windows "Disk Management" without success. The current hard disk

arrangement is making it impossible for me to Clone the disk. Is there anyone in the club that has expertise that could help?

A.　　[Phillip Lynch from iHelp answers] As it's a Windows PC, try using "DiskPart". That will enable you to do anything you like to the hard drive. It's a low-level command that you run from the DOS prompt.
[George] If you type "DiskPart /?" and then press Enter, you'll see a list of all the options available using Diskpart.

Figure 1 – Diskpart Delete Partition option

Q.　　With the Russian invasion of Ukraine, and as the anti-virus program Kaspersky is Russian owned, is there any likelihood that Russia will use this program to attack our computers?

A. Kaspersky is not state owned but privately owned, so it's unlikely. Having said that, President Putin has a lot of influence over private enterprise so it's not beyond the realms of that possibility occuring.

Figure 2 – Kaspersky antivirus software

Q.　　If I remove Kaspersky from my computer, what would you recommend as a replacement?

A.   Windows Defender is actually not a bad antivirus program and it's free with Windows. However, based on authoritative reviews over the last 2 or 3 years, Kaspersky and Bit Defender come out on top, so if in doubt I'd recommend Bit Defender.

Q.   I use Wi-Fi on my laptop to connect to the internet. I find the signal drops out every few minutes and I have to log back into my Wi-Fi when this happens. Sometimes the signal will last a minute and other times an hour. I turned the router (modem) off for 15 minutes and when reconnected the problem is still there. Do you have any other suggestions?

A. It's unlikely to be the router. I would load an app on your phone called "Wi-Fi Analyser" and check the signal strength of your Wi-Fi. It's possible there could be interference from a neighbour nearby, who's using the same Wi-Fi channel as you're using. If that is the case, I'd suggest you log into your router and move the channel your Wi-Fi is using to a channel that is not in use. You don't have to do anything else, as your phone, tablet or computer will find the signal automatically. My first approach would be to determine the signal strength.

George followed with a brief overview of Wi-Fi Analyser, showing members the various screens and options available in the app.
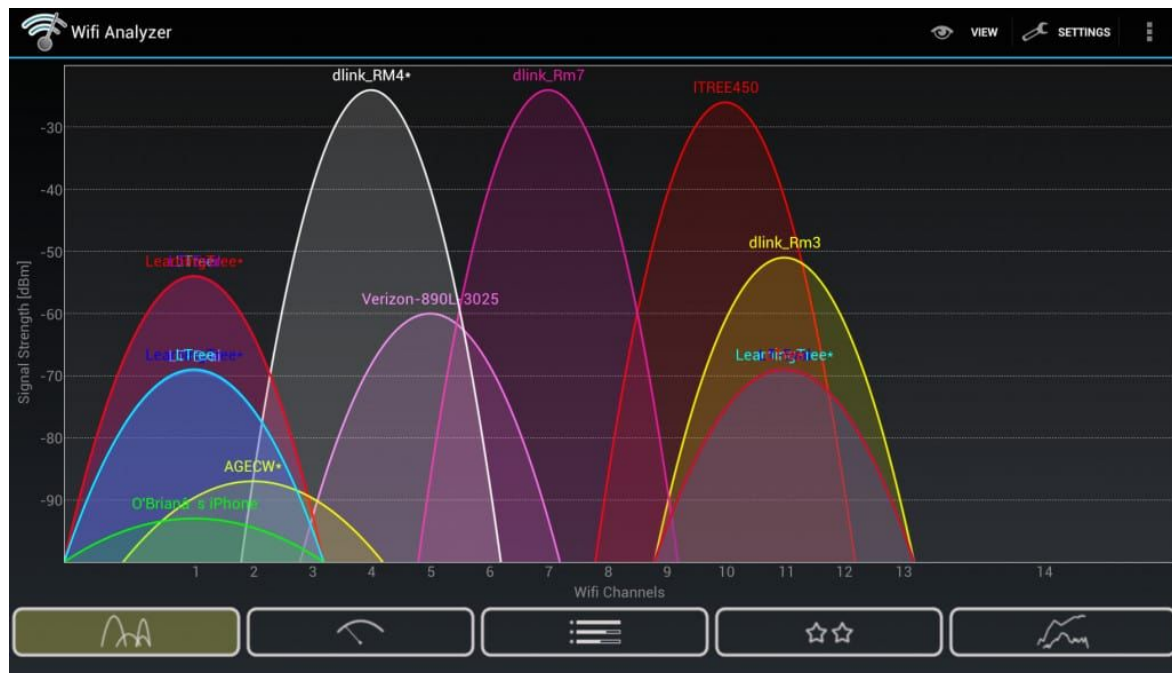
Figure 3 – Wi-Fi Analyzer Channels screen

[David King] I've had the same experience as you and the only way I could solve the issue is by getting a new router. Are you using the 2.4 or 5 Ghz band when the signal drops out?
[Reply] I have a dual band modem but how do I tell which band I'm using?

[Dave Botherway] The way I determined whether I'm using 2.4 or 5 GHz was to go into the router settings and make the SSIDs different. I've set 2.4GHz as DaveB2.4 and the 5GHz as DavedB5.0. That way I know exactly which band I'm using.

[George] That's a good tip.

Q.   I've been receiving multiple emails from Yammer in the last few days. Has anyone else been receiving those as they are most annoying? I've subscribed to "Chat" and other channels and have receive 30 email alerts in the last few days.

A.   [Dave Botherway] Only those who have subscribed to Yammer will have received the emails alerts.

[Phillip Lynch] You can unsubscribe to the Yammer emails. It's in the settings in your browser so you can elect not to get the emails. The iHelp members can help you turn the alerts off.

[David King] If you go to the bottom of the Yammer emails, you will see there is an unsubscribe option. You can still see Yammer in your browser, unsubscribing will only stop the emails.

Following Q&A, **Dave Botherway** looked at the new features of Windows 11 File Explorer. When Dave originally started using the Windows 11 File Explorer, he was not a fan and disliked it. However, after a few weeks of use, he has changed his mind to the extent that he now "loves it". As many MelbPC members have not been able to upgrade to Windows 11 due to the strict hardware requirements, Dave felt he needed to bring the change to members notice.

To commence this topic, Dave summarised the "Quick Access" toolbar in Microsoft Word as this will be relevant later in his presentation. The "Quick Access" toolbar first appeared in Microsoft Office when the ribbon menu system was first introduced. The Quick Access Toolbar shown in Figure 4 is a customizable toolbar that sits on the top left of the ribbon. It contains a set of commands independent of the currently displayed options on the ribbon. Dave demonstrated how to add additional functions to personalise the toolbar to suit individual user's needs.
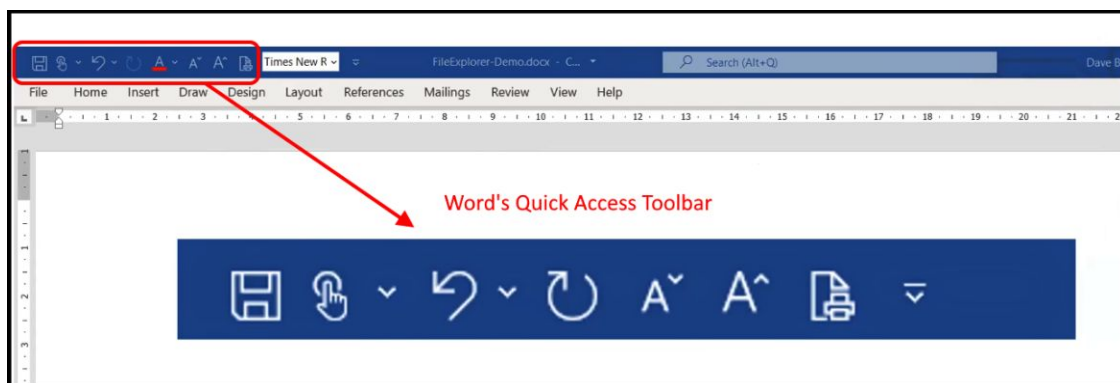

Figure 4 – Microsoft Word's Quick Access Toolbar

When using File Explorer in Windows 10, a single right click on a file will open the full context menu (Figure 5). With the introduction of Windows 11, the options available in File Explorer's right click context menu have been reduced significantly. To display the full list of options, a user has to click the "Show more" link in the context menu. Clicking on this link opens a second context menu as can be seen in Figure 6. At first Dave found it annoying to have to click twice to open the full right click menu in Windows 11. However, what he didn't realise initially was that the first right click context menu contained a "Quick Access" toolbar. Dave now finds this addition very useful.

Programs that add entries to the right click context menu need to be updated for Windows 11, for their entry to be shown in Windows 11 context menus. At the time of the presentation, Dave was uncertain whether the Quick Access Toolbar will be customizable in future.

Dave followed by demonstrating the differences between the right click context menus in the 2 versions of Windows File Explorer. The screen images below are taken from Dave's presentation.
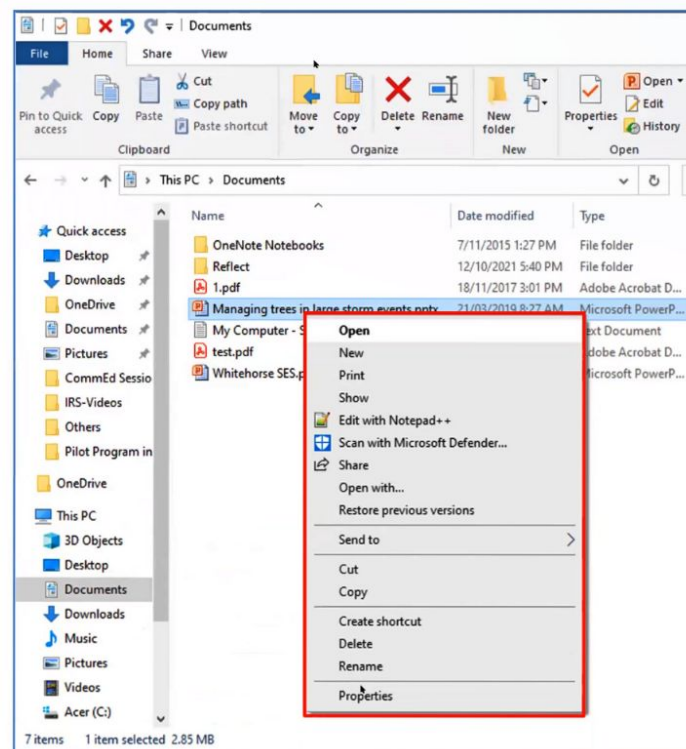

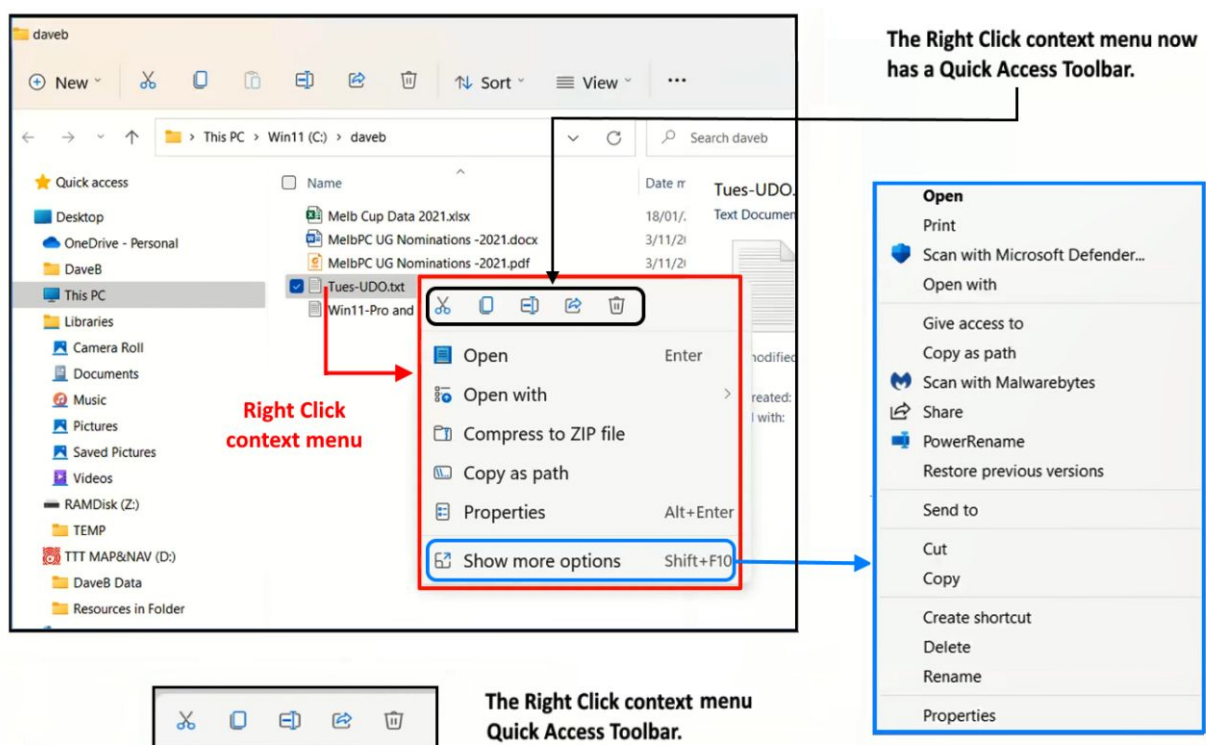Figure 5 – Windows 10 File Explorer right click menu

Figure 6 – Windows 11 File Explorer right click menus

The final presentation was by **Brian Heywood** on the Windows 10 Video Editor. Brian's presentation was split into two sections, the first dealing with editing a video and the second showing how to create an animated photo slideshow from still photographs, both using the free Windows 10 video editor.

Both Windows 10 & 11 have a video editor that is easy to overlook, but can be found included with the Windows Photos App. The Video Editor works in a similar way to the old Windows Movie Maker, which was discontinued some time ago.

Advantages of using the Windows Video Editor is it's free, simple to learn and easy to use. It doesn't have the disadvantages of other free video editors that may require the user to provide a credit card to use, contain watermarks or offer free trials with dubious conditions.

The Windows Video Editor can quickly and easily add and trim existing videos, add titles and background music, to produce movies or slideshows. It can also create videos automatically. Although this option was very quick, it is a bit hit and miss and did not give Brian the satisfactory output he wanted, when he demonstrated this feature later in his presentation.

The first section of Brian's presentation demonstrated how to edit a movie in Windows Video Editor, from videos taken with a smart phone. Brian felt he couldn't improve on the YouTube video by Kevin Stratvert, titled "How to use free Windows 10 Video Editor", so commenced his presentation playing Kevin's video.

The video by Kevin Stratvert is an excellent coverage of features in the Windows 10 Video Editor. All the steps a user would use from the very start of a project to the finish are outlined. It's an excellent and very thorough tutorial, with all options available in the Windows 10 Video Editor explained fully. Kevin has a large resource of excellent tutorials on numerous Windows programs and these are well worth checking out.
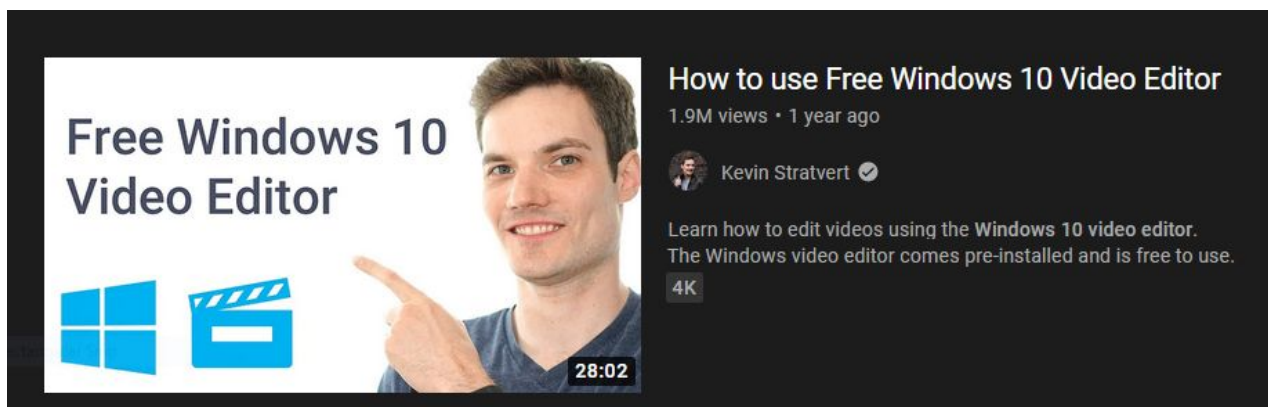
Figure 7 –YouTube Video by Kevin Stratvert

In the second part of the presentation, Brian took a selection of digital photographs and produced an animated slideshow with title, text and accompanying audio. Brian commenced his demonstration using the video editor in custom mode, using many of the same features used to produce videos. Custom mode requires the user to do all the editing, but due to the simplicity of the Windows 10 Video Editor, this is not a difficult task.

Brian's demonstration covered all the features I've listed below, needed to produce an excellent animated slideshow. From this list, one can see that the Windows 10 Video Editor has a good range of features. These include:

- Name a project,

- Import and rearrange photographs on the timeline,

- Add a title, using the numerous pre-installed styles available,

- Use the Ken Burns effect, (i.e. panning or zooming in or out of photographs),

- Set the duration each photograph is displayed,

- Add music to a slideshow from those pre-installed or from your collection,

- Exporting the finished video to the desktop.

- Save the project as a mp4 file, using one of the 3 video quality settings available.

Following the demonstration using the video editor in custom mode, Brian demonstrated how to produce an animated slideshow using the "Automatic video" option. If this option did not produce a slideshow or video to your liking, 2 further options are available. These were icons when selected would "Edit video" (i.e. in custom mode) or have the editor "Remix it for me".

Brian listed three short comings of the Windows 10 Video Editor over other free video editors:

- There is only one video stream – i.e. There are no separate Video and Audio tracks

- The highest video output resolution is 1080p (1920 x 1080)

- You can't add transitions between Video sections or Photos in a slideshow

The advantage of the Windows 10 Video Editor is its simplicity and ease of use. If the listed disadvantages are not important to you, Brian recommends Windows 10 Video Editor is worth considering. Brian likened the Windows 10 Video Editor, as "Video editing for dummies".

Using Linux as my daily driver

Hugh Macdonald

I initially wrote an article of October 2020 where I announced I was going to spend more time using Linux, use Ubuntu as my distribution of choice, and use Linux as my daily driver, I haven't provided any kind of update on my own use of the platform.

I thought it might be interesting for many of you to read about how things have been going in the interim as you may have either switched to Linux and gone through some of the same experiences, or be considering making the switch and are looking for information on the most effective way to make that happen.

A few things recently have dovetailed to give me an opportunity to create an article about my experiences since then.

In general, how has it gone?

After initially switching over one PC to Ubuntu 20.04, the joy of a new operating system got to me (and a slight bit of obsessive compulsiveness in that I like consistency across the computers I use) and had me switching all my Windows PCs to Ubuntu 20.04. And for a while I was quite happy with this arrangement. I had a Windows 10 VM on each one for the limited number of things I still needed to do in Windows (mainly work things in a fully fledged version of Microsoft Office).

But then I realised I could still do with a PC running Windows natively, so I uninstalled Ubuntu from one and reluctantly brought it back to Windows. By then I had switched the shared desktop PC over to Ubuntu, and for the amount of time my wife was using it, I don't think she even noticed the difference. But she went back to study this in the middle of last year and was using it a lot more, so started the differences between Ubuntu and Windows a lot more. She wasn't willing to give Ubuntu much of a go, so it needed to return to Windows too.

So in the end I finished with a Linux laptop, a Windows laptop and a Mac laptop as well the Windows desktop PC. So a laptop for all occasions/operating systems.

Then I realised that I didn't like the graphical user interface of Ubuntu (Gnome 3.36) as much as I had originally thought. So I decided to do some 'distro hopping'. I could have taken a less onerous tack here and simply installed another desktop environment under Ubuntu and set it to login with that, but I saw it as an opportunity to try a completely different approach to Linux from the 'Ubuntu family' one I was used to.

Manjaro

At first I thought I would try Manjaro, seeing as so many sing its praises, and I'd never tried any Arch based distro before. I went with the Gnome version again, and I really liked their implementation of Gnome so that was a big tick for them. I also liked the idea of rolling updates and access to the Arch User Repository (AUR) was great.

But it didn't automatically find my printer like Ubuntu always did, and although this didn't stop me, I couldn't get the printer setup quite right no matter what I did, so although I was perhaps somewhat impatient, it was time to consider moving on again. I want to point out that printing issues don't seem to be common with Manjaro, so it was probably just my printer, and if you are thinking of switching to Linux, definitely keep Manjaro on your list as a good distribution to use. But move on I eventually did

Linux Mint

So this time I just went boring and went back to Linux Mint, the distro I'd used on and off for many years. As far as I'm concerned it's a good choice for anyone. It always has full compatibility with the most recent Ubuntu LTS version so therefore has a very wide selection of applications available for it.

Its desktop environment Cinnamon is very nicely designed with a 'Windows 7 for the modern times' feel to it, and additional applications that the Linux Mint team specially develop like the Software Updater are some of the best you'll find on any Linux distribution.

Since going through that process I've been using my Linux laptop extensively. It's probably quite easily become my most regularly used laptop, because with the elegance of Cinnamon and the power and simplicity of the Linux kernel underneath, it's been a hard combination to go past for daily use.
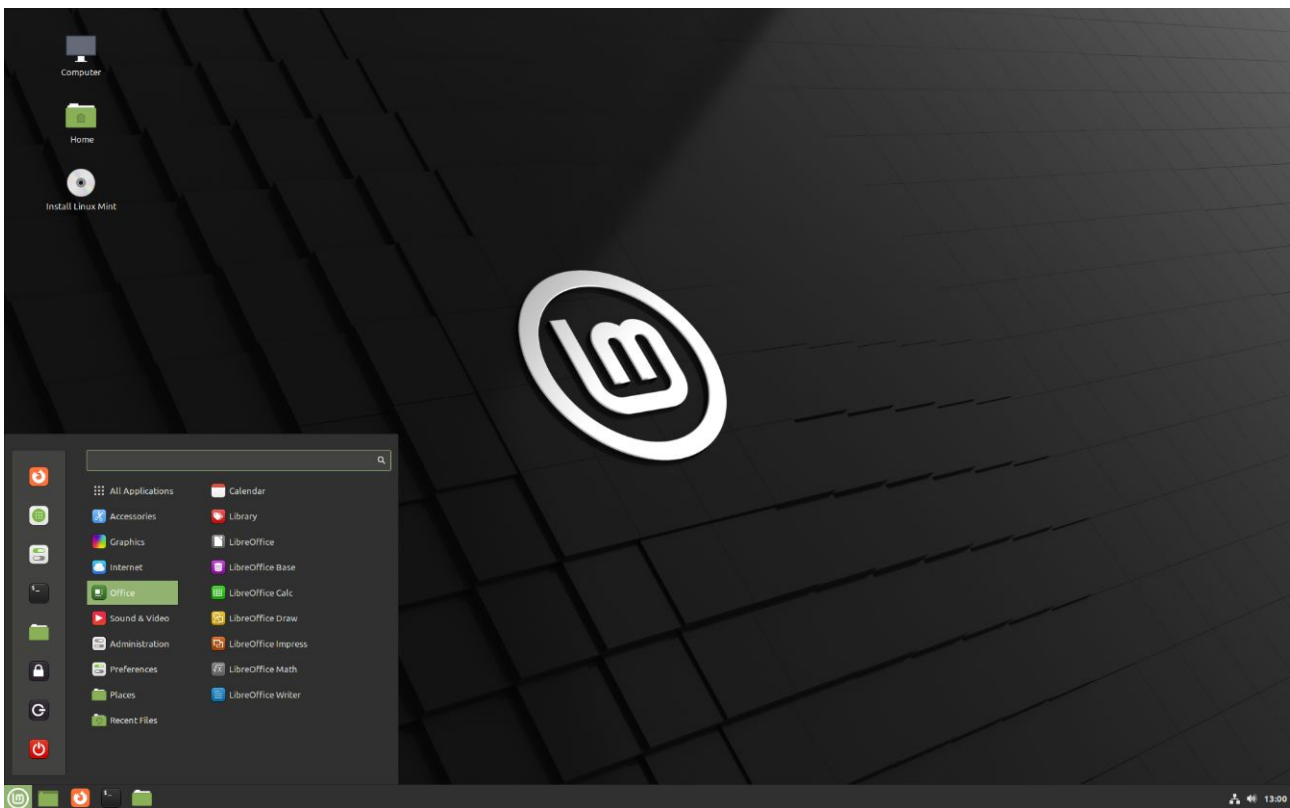
What's also helped me ease into Linux is that I've been a cross platform user for a long time (across Windows and Mac), and when I've looked for applications to use in the past I've always adopted those that have good cross platform support. I didn't necessarily know if this 'stack' of applications would perfectly translate to Linux however, but it turns out that it did with only a few minor tweaks to it.

Useful applications

You might be interested to know that these are the applications in my stack:

My web browser of choice is Microsoft Edge. Compared to other browsers, the thing I really like about Edge is the vertical tabs it offers. This is such a great space saving feature and once you get used to it, there's no going back to horizontal tabs. Edge is now completely cross platform with versions for Windows, Mac and Linux all on the same release schedule.

I like to use a desktop email client, as I like to aggregate all my email accounts into one place so I don't miss anything. On Linux there really is only one good choice and that's Thunderbird. It's my preferred email client on Windows and Mac already (where I find the Outlook client to be outdated and bloated) so no adjustment for Linux was needed here.

I use OneDrive for my online storage and backup purposes, mainly because it is the most cost effective for the amount of storage space I need. Just like Google Drive, it doesn't have its own Linux client so a third party option is needed. For this I use Insync, which does exactly what you'd expect it to in syncing your folders between the computer and the cloud. However it may be

anathema for some Linux users, it's a paid program (starting at US$ 49.99 perpetually). So just a small adjustment here from the normally free OneDrive client on PC and Mac.
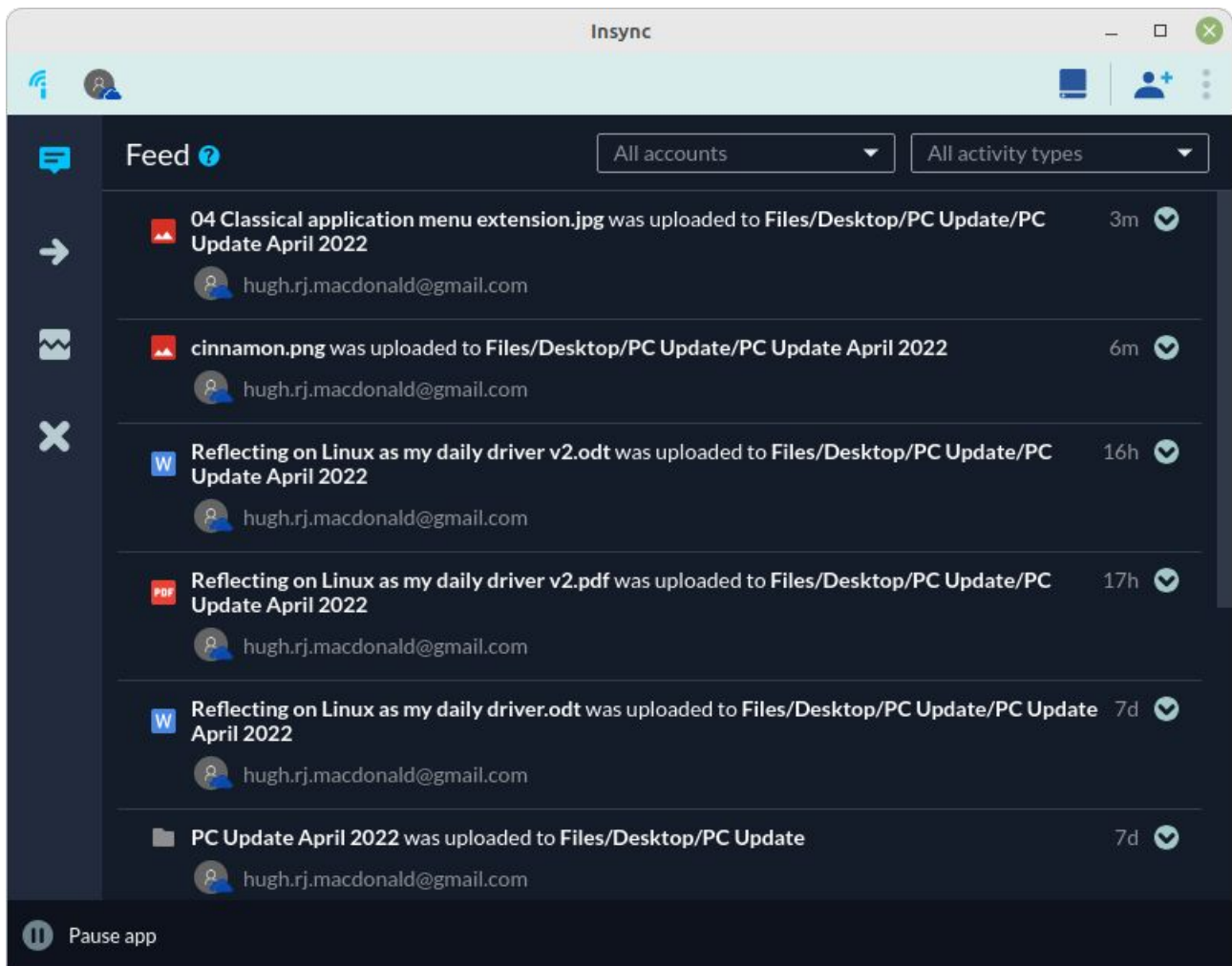
I take lots of notes on different things and for this I use Simplenote. There's a version for pretty much every desktop and mobile operating system plus a web version if you're on someone else's computer. So it does exactly what it says it does – it allows you to take notes and they're searchable and taggable and it's great, and it just installed directly from the Linux Mint repository so no change was necessary here.

I like to keep reminders of things and so my next really important program is Todoist. It has an official Linux version you can download as a Snap, or there's an unoffical Flatpak which works well also. So once again, no change needed to use this part of my 'stack' on Linux.

Finally given the kind of work I often do, I need a productivity suite and the choice I make for my software stack is LibreOffice. It's fast, it's stable, it has an interface that makes good sense, and best of all it is free. So no change needed for my stack on Linux here either.

So overall

With very little effort on my part, I've managed to get the same core set of applications running on Linux Mint as I had on Windows and Mac in the past and this has meant that I've barely noticed that I'm running Linux rather than Windows. I'm sure five years ago it wouldn't have been like this,

but software vendors have gradually supported Linux more extensively and with a lot of applications written using cross platform APIs (application programming interfaces) that are also designed to work with web browsers, it's much easier to find applications, as I have, that essentially work the same across all the major operating systems. That is a great thing for everybody.

What's happened more recently?

A couple of things have happened more recently to extend this article on my experiences with Linux.

The first of these is that I recently was given a 2014 12 inch MacBook Air, which is a laptop I always considered too small for my own use. However I'd never tried to install Linux on a Mac so I thought it would be an interesting test to see how straightforward it would be to go through the process Apple had dropped Mac OS support for it one version ago, so it would start to lose software support in a few years anyway.

My first move was to go for a nice lightweight OS on it as it only had 4GB RAM so I was thinking of Lubuntu 20.04. This installed fine (and wasn't any harder to do than installing Linux on a PC) but it didn't have the WiFi driver for the Mac, so I had to hunt around and find it, which I did eventually. However even though it could see my WiFi network, it would never actually connect to it. There was undoubtedly something else I needed to do to get it working but once again I wasn't patient enough. Next I decided to give Manjaro a go on this machine, because being a different Linux 'family' to Lubuntu I thought there was a chance they might have had out of box support for the pesky Broadcom driver that was plaguing me. However it did not, and that impatience got to me again so rather than get into the nitty gritty of Manjaro I again thought I'd try Linux Mint Cinnamon even though it was essentially returning to the Ubuntu Linux 'family' I'd already come up short in. Well this time, I guess through Mint's renowned support of more proprietary drivers, it installed straight out of the box and I had a second working Linux Mint laptop (which I setup to basically mirror my main one) that looked like a MacBook Air on the outside.

Now in recent weeks, as David Stonier-Gibson wrote in his editorial for the March 2022 edition of PC Update, I've become indisposed. This was David's discrete way of telling you I'm in hospital with a non life-threatening illness that is just taking quite a bit of time to recover from. So I've come to need a laptop to help me pass the hours as I recover. Something small, something light, something not too valuable where it wouldn't matter too much if something happened to it while I was in hospital. The MacBook Air Linux I'd setup as an experiment ticked all the boxes so was duly brought to the hospital.

So I haven't used Windows or Mac OS for three weeks now. How have I gone?

There's nothing I've missed from not having access to Windows or Mac for over three weeks now because as discussed above I keep my major software stack pretty similar over all three platforms. As all those major programs pretty much look and work exactly the same on each operating system there's nothing I'm really having to adjust to.

The hospital I'm in has a WiFi network but it is pretty terrible so I've come to use my iPhone's hotspot for my Internet connection. In order to keep the phone charged I've connected it via USB to

my laptop at the same time. Linux Mint has identified the phone as a router/wired connection within seconds and I have been off and using it straight afterwards. It would have been similar to this on Mac OS but on Windows I would have needed to install iTunes before being able to do this. So that has made the whole process of 'hotspotting' much easier and is an additional tick for Linux.

Updates wise in Linux Mint there is a little icon in the bottom right taskbar that looks like a shield when the system is completely up to date and a half shield with a small red dot when there are updates waiting to be installed. I'd always been pretty religious with installing updates but this time I thought I'd push it to see how naggy Linux Mint is compared to the other OS (which range from very naggy for Windows to somewhat naggy for Mac OS, which tends to have much bigger but infrequent updates). It was only after about two weeks of not doing anything that I was gently reminded in the background that updates are available and I can turn on auto updates if I wish.

It's nice to have a software manager (or repository) which you know is going to contain all of the major apps for that platform. Neither Windows or Mac can lay claim to this, probably because both are trying to implement it in a commercial way as a store where software makers will need to share their revenue. But most Linux distributions, where the open source ethos is in effect, including Linux Mint can. I've had to install a few applications over the last few weeks, and I've just gone straight for the software manager, searched and downloaded what I needed. This approach also makes Linux for more secure than Windows or Mac for any user – anything instaAnd for an FYI, I reckon the Gnome version of Solitaire (called AisleRiot) found in the Linux Mint repository is way harder than its Windows counterpart.

Performance is great considering the hardware I'm on. This MacBook Air Linux has a dual core Intel Core i5, 4GB RAM and a 256gb SSD. So it is hardly a performer in any sense. But it is very responsive running Linux Mint 20.03 Cinnamon. It boots up in about 10 seconds, and applications like Edge and Thunderbird open instantly. Cinnamon is definitely lighter weight than Gnome as a session with Edge, Thunderbird, LibreOffice and Linux Mint's PDF viewer open uses 2.75gb RAM of 3.78gb RAM according to the htop utility.

Overall I've had zero complaints about Linux Mint over the past three weeks. In a sense of balance and fairness I'd like to talk about something that has annoyed me over that time but there really isn't anything.
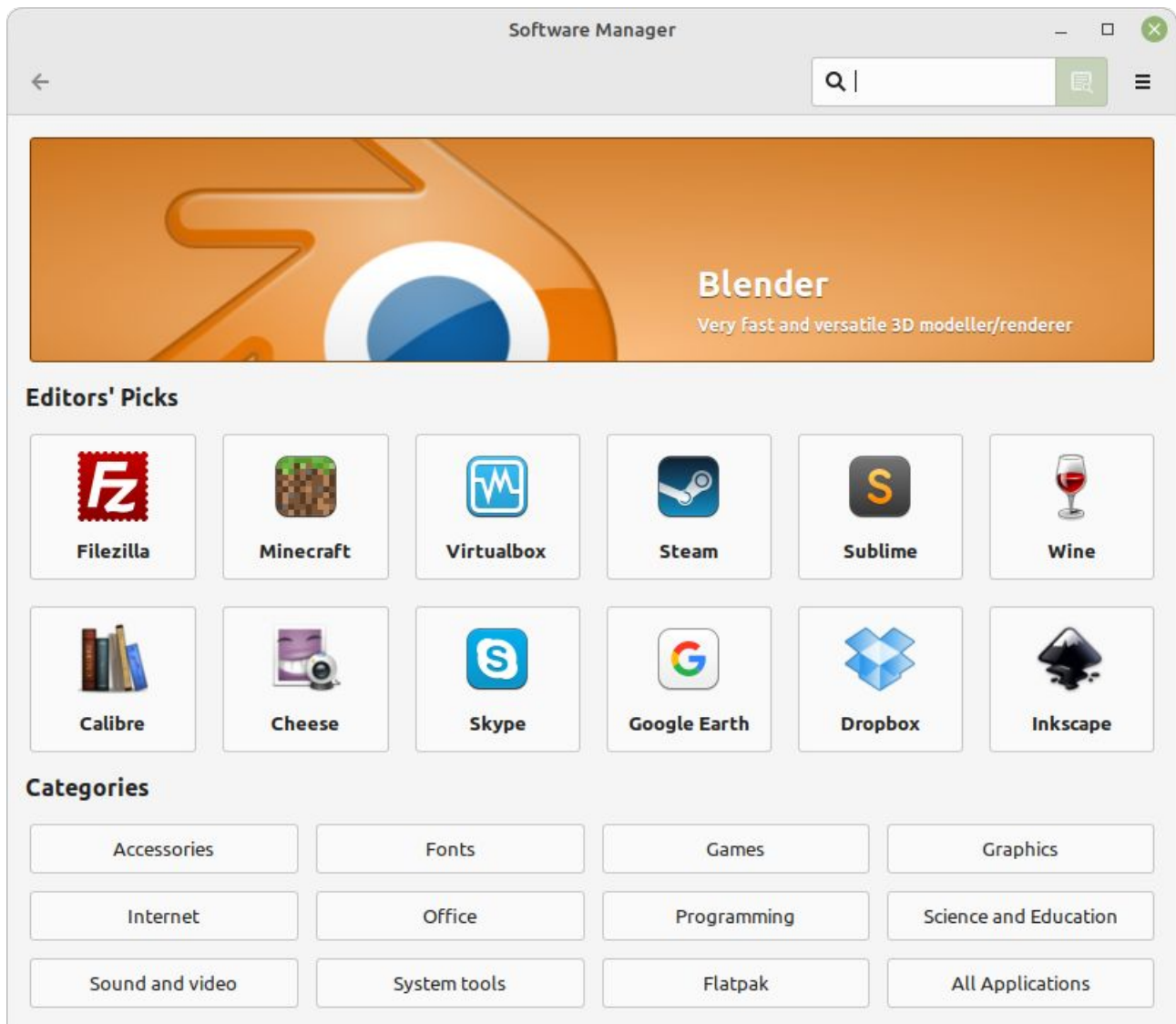
So settle the old Windows vs Linux debate for us, please Hugh…

I don't even really like how the IT industry constantly gets into battles or wars over things like operating systems, browsers or smart phones. If you are perfectly happy with the operating system you're currently using then obviously you can just enjoy reading about my computing experiences and not give Linux or Linux Mint. However if you are seriously questioning which operating system to use, or you're about to purchase a new computer, then here are the pros and cons in my opinion

Linux

Pros

- Most distributions are free to download and use (Manjaro, Mint and Ubuntu all definitely are)

- Compatible with most PC hardware out of the box so no need to go looking for drivers

- Often runs better on older hardware than Windows does

- Designed to be very secure, and no antivirus is necessary

Cons

- Does not run major software programs like Adobe Creative Cloud and Microsoft Office, so a deal breaker for some users

- Occasionally something will need knowledge of the command line to be configured, although there is very extensive documentation provided

Mac OS

Pros

- Very secure as is built on top of a FreeBSD base so also no antivirus necessary

- Comes with a lot of key applications built in – productivity, web browser, email and others all included

- Designed to be very straightforward and easy to use

- Comes with great utilities like Migration Assistant and Time Machine to make maintenance of your computer very easy

Cons

- Only comes with Apple hardware, so is often more expensive than a similar Linux or Windows machine

- Does not have quite as much application support as Windows

- Power users can't tweak Mac OS to their own preferences as much as Linux or Windows

Windows

Pros

- Most widely supported operating system for desktop and laptop PCs in terms of number of applications available

- Most compatible with hardware devices that are available

- Can be customised easily by power users

Cons

- Least secure, and often requires third party programs to make it secure enough

- Updates can sometimes cause stability problems

- Starting to exhibit user hostile behaviour in Windows 11 – requiring a Microsoft account for use, not allowing a simple change of the web browser or email client anymore.

So if any of the above has you thinking more seriously about trying out Linux or making a permanent switch to it, PC Update has you with plenty of food for Linux thought of late. In December 2021 I went through the general process of installing a Linux distribution and the general recommendation for starting out was to use Linux Mint. In the February 2022 edition of PC Update, Roger Brown talked you through installing Arch Linux and the various different options available if you want to try that 'Linux family'. And here I've given you an inside account of my experience of

using Linux over the past couple of years. So you are armed with enough knowledge now to get started if you wish.

But if you do get lost along the way then just stop into the Linux Chat community on Yammer. Here you'll find many experienced Linux users who will be only too happy to talk you through an installation or answer any question about configuration that you might have.

The Other Side of the Bitcoin

By David Kretchmar, Sun City Summerlin Computer Club

In the April 2021 edition of the Gigabyte Gazette, I contributed an article titled "Bitcoin - the New Gold?". I stated that "Gold and Bitcoin, as different as they are, both have characteristics of good investment vehicles and sound money."

In the April article, I emphasized the positive aspects of Bitcoin (along with other cryptocurrencies). I concluded by stating, "Bitcoin is becoming a valued currency not by force of government declaration or people's acquiescence, but by recognition and popular acceptance."

Yet any investment with tremendous past profits and massive future potential also necessarily has tremendous downside potential. In this article, I will discuss what I think could be the downfall of Bitcoin and other cryptocurrencies.

Scarcity?

Under current protocols, the maximum number of Bitcoins that can ever be mined is 21 million. There are approximately 18.8 million bitcoins in circulation today. It is estimated the last bitcoin will be mined in 2040.

Many cryptocurrencies have a finite limit, and the speed at which they will be increased is largely unknown and not controlled by any authority. But the scarcity element exists only within some specific cryptocurrencies, such as Bitcoin, Cardano (45 billion limit, 32 billion in circulation), and Litecoin (84 billion limit, 24 billion in circulation).

Other cryptocurrencies, such as Ethereum and Dogecoin, have no limit. There are well over 1,000 cryptocurrencies in existence, with new ones being created seemingly weekly. The potential supply of cryptocurrencies is infinite, limited only by the human imagination and the willingness of individuals to fork over their cash. Cryptocurrencies are far from scarce.

Loss of Key

The key is the secret code required to access a cryptocurrency wallet. The loss of this code means the loss of all assets stored in the wallet. If the PC hard drive or flash drive fails or is accidentally discarded, this can happen. According to estimates, this is common; it has happened with up to 25% of crypto-wallet owners who have lost over 18 billion dollars' worth of digital currencies. Unfortunately, it is impossible to restore the code and recover the currency if lost.

Technical issues

Technical problems on the servers where cryptocurrency wallets are stored happen with disturbing frequency. Investors who have suffered losses cannot claim a refund regardless of whose fault it is. Usually, the problems are caused by hackers and occasionally by bugs in software or hardware, but no matter – when the money disappears, it is gone.

Government Intervention

Some governments seem willing to accept or at least accommodate cryptocurrencies, such as the US and Canada. However, other nations, such as Russia and China, have denounced or outlawed cryptocurrencies within their borders. In late September, the Chinese government expanded its ban on Chinese financial institutions providing crypto-related services. In addition, it restated its goal of forcing miners out of business. This announcement knocked 10% or more off of the values of many cryptocurrencies on 9/24/21 before a small recovery.

Governments lose the ability to use fiscal policies to control their economies when they allow the widespread adoption of digital currency. In addition, if cryptocurrencies were widely adopted, nations would lose the purpose and power of their national banking systems.

There are fears of rising cybercrime and other crime rates due to the increased ability to transfer value through untraceable financial transactions. In addition, some claim the rise of crypto-based payments could increase the ability of people to engage in illegal activities without leaving a trail, another reason many governments opposed the adoption of cryptocurrencies. However, I believe these fears are overstated since law enforcement has been able to trace and recover some cyber ransom proceeds, which would probably be impossible with cash.

Speculation Gone Wild?

On a Sunday afternoon in early September, my wife and I almost accidentally wandered into a "cryptocurrency seminar" held in a small meeting room at DV here in Sun City. We soon discovered that we were in a multi-level marketing rally, including testimonies of several people stating they had made hundreds and thousands of dollars in seconds or minutes by using the system the presenters were promoting. Loud claps and cheers followed each testimony. They named several cryptocurrencies; most were unknown to me.

One MLM rally provides anecdotal evidence of probably nothing. However, I have to wonder how many other like-minded individuals worldwide have embraced the suspension of logic and critical thinking required to be swept up by the allure of quick profits in cryptocurrencies.

Conclusions

Many of us can remember the "dot com" boom at the end of the last century. Any company claiming to have an idea relating to providing anything through the then-new internet could issue stock and reach a substantial valuation. Many new companies had no earnings or revenues, yet they doubled in price the day they started trading. Investors knew these stocks had no intrinsic value, but no matter if they could sell them at a higher price than they paid. That sounds very much like most cryptocurrencies today.

When the crash came in 2000, even the few good internet companies such as Amazon and Priceline (Booking.com) saw the destruction of a substantial majority of their market value. This persisted for many years until they eventually recovered and went higher. Unfortunately, most of the dot com companies whose value soared astronomically came crashing back to earth, becoming worthless losing investors billions of dollars.

The current cryptocurrency craze exhibits many similarities to the dot com boom and echoes many speculative bubbles of the past. For example, the Dutch "tulip mania" in the 17th century is considered the first recorded speculative asset bubble. Prices for some rare tulip bulbs reached amazingly high levels, $750,000 in today's money, then dramatically collapsed to virtually nothing.

A $50k cryptocurrency investment has the potential to become a half-million dollars or more or to become worthless; you won't even be left with a beautiful flower. And remember, there exists no centralized exchange like there was with stocks and even for tulip bulbs. So, it could be very ugly. History never repeats, but it certainly rhymes.

Beer and spirits have more detrimental effects on the waistline and on cardiovascular disease risk than red or white wine

Researchers are working to tease apart how various alcohol types contribute to weight gain and disease risk.

Brittany Larsen, *Iowa State University*

The Research Brief is a short take about interesting academic work.

The big idea

Drinking beer and spirits is linked to elevated levels of visceral fat – the harmful type of fat that is associated with an increased risk of cardiovascular disease, metabolic syndrome, and other health complications – whereas drinking wine shows no such association with levels of this harmful fat and may even be protective against it, depending on the type of wine consumed. In fact, we found that drinking red wine is linked to having lower levels of visceral fat. These are some of the key takeaways of a new study that my colleagues and I recently published in the Obesity Science & Practice journal.

Although white wine consumption did not influence levels of visceral fat, our study did show that drinking white wine in moderation might offer its own unique health benefit for older adults: denser bones. We found higher bone mineral density among older adults who drank white wine in

moderation in our study. And we did not find this same link between beer or red wine consumption and bone mineral density.

Our study relied on a large-scale longitudinal database called the U.K. Biobank. We assessed 1,869 white adults ranging in age from 40 to 79 years who reported demographic, alcohol, dietary and lifestyle factors via a touchscreen questionnaire. Next, we collected height, weight and blood samples from each participant and obtained body composition information using a direct measure of body composition called dual-energy X-ray absorptiometry. Then, we used a statistical program to examine the relationships among the types of alcoholic beverages and body composition.

Why it matters

Aging is often accompanied by an increase in the problematic fat that can lead to heightened cardiovascular disease risk as well as by a reduction in bone mineral density. This has important health implications given that nearly 75% of adults in the U.S. are considered overweight or obese. Having higher levels of body fat has been consistently linked to an increased risk for acquiring many different diseases, including cardiovascular disease, certain types of cancer, and a higher risk of death. And it's worth noting that national medical care costs associated with treating obesity-related diseases total more than US$260.6 billion annually.

Considering these trends, it is vital for researchers like us to examine all the potential contributors to weight gain so that we can determine how to combat the problem. Alcohol has long been considered one possible driving factor for the obesity epidemic. Yet the public often hears conflicting information about the potential risks and benefits of alcohol. Therefore, we hoped to help untangle some of these factors through our research.

What still isn't known

There are many biological and environmental factors that contribute to being overweight or obese. Alcohol consumption may be one factor, although there are other studies that have not found clear links between weight gain and alcohol consumption.

One reason for the inconsistencies in the literature could stem from the fact that much of the previous research has traditionally treated alcohol as a single entity rather than separately measuring the effects of beer, cider, red wine, white wine, Champagne and spirits. Yet, even when broken down in this way, the research yields mixed messages.

For example, one study has suggested that drinking more beer contributes to a higher waist-to-hip ratio, while another study concluded that, after one month of drinking moderate levels of beer, healthy adults did not experience any significant weight gain.

As a result, we've aimed to further tease out the unique risks and benefits that are associated with each alcohol type. Our next steps will be to examine how diet – including alcohol consumption – could influence diseases of the brain and cognition in older adults with mild cognitive impairment.

[*Over 150,000 readers rely on The Conversation's newsletters to understand the world.* Sign up today.]

Brittany Larsen, Ph.D. Candidate in Neuroscience & Graduate Assistant, *Iowa State University*

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Australia plans to be a big green hydrogen exporter to Asian markets – but they don't need it

Andrew Blakers, *Australian National University* and Cheng Cheng, *Australian National University*

In its latest budget, the federal government has promised hundreds of millions of dollars to expand Australia's green hydrogen capabilities.

Green hydrogen is made by electrolysis of water, powered by solar and wind electricity, and it's key to the government's "technology not taxes" approach to meeting its climate target of net-zero emissions by 2050.

The government aims to create a major green hydrogen export industry, particularly to Japan, for which Australia signed an export deal in January. But as our latest research suggests, the likely scale may well be overstated.

We show Japan has more than enough solar and wind energy to be self-sufficient in energy, and does not need to import either fossil fuels or Australian green hydrogen. Indeed, Australia as a "renewable energy superpower" is far from a sure thing.

Japan has plenty of sun and wind

"Green" hydrogen could be used to generate electricity and also to form chemicals such as ammonia and synthetic jet fuel.

In the federal budget, hydrogen fuel is among the low-emissions technologies that will share over A\$1 billion. This includes \$300 million for producing clean hydrogen, along with liquefied natural gas, in Darwin.

Australia plans to be a [top-three exporter of hydrogen](#) to Asian markets by 2030. The idea is that green hydrogen will help replace Australia's declining coal and gas exports as countries make good on their promises to bring national greenhouse gas emissions down to zero.

Underlying much of this discussion is the notion that crowded jurisdictions such as Japan and Europe have insufficient solar and wind resources of their own, which is wrong.

[Our recent study](#) investigated the future role of renewable energy in Japan, and we modelled a hypothetical scenario where Japan had a 100% renewable electricity system.

We found Japan has 14 times more solar and offshore wind energy potential than needed to supply all its current electricity demand.

Electrifying nearly everything – transport, heating, industry and aviation – [doubles or triples demand for electricity](#), but this still leaves Japan with five to seven times more solar and offshore wind energy potential than it needs.

After building enough solar and wind farms, Japan can get rid of fossil fuel imports without increasing energy costs. This removes three quarters of its greenhouse gas emissions and eliminates the security risks of depending on foreign energy suppliers.

Japanese energy is cheaper, too

Our study comprised an hourly energy balance model, using representative demand data and 40 years of historical hourly solar and wind meteorological data.

[We found](#) that the levelized cost of electricity from an energy system in Japan dominated by solar and wind is US$86-110 (A$115-147) per megawatt hour. Levelized cost is the standard method of costing electricity generation over a generator's lifetime.

This is similar to Japan's 2020 average spot market prices (US$102 per megawatt hour) – and it's about half the cost of electricity generated in Japan using imported green hydrogen from Australia.

So why is it much more expensive to produce electricity from imported Australian hydrogen, compared to local solar and wind?

Essentially, it's because [70% of the energy is lost](#) by converting Australian solar and wind energy into hydrogen compounds, shipping it to Japan, and converting the hydrogen back into electricity or into motive power in cars.

Thus, hydrogen as an energy source is [unlikely to develop into a major export industry](#).

What about exporting sustainable chemicals? Hydrogen atoms are required to produce synthetic aviation fuel, ammonia, plastics and other chemicals.

The main elements needed for such products are hydrogen, carbon, oxygen and nitrogen, all of which are available everywhere in unlimited quantities from water and air. Japan can readily make its own sustainable chemicals rather than importing hydrogen or finished chemicals.

However, the Japanese cost advantage is smaller for sustainable chemicals than energy, and so there may be export opportunities here.

What about other countries?

While large-scale fossil fuel deposits are found in only a few countries, most countries have plenty of solar and/or wind. The future decarbonised world will have far less trade in energy, because most countries can harvest it from their own resources.

Solar and wind comprise three quarters of the new power stations installed around the world each year because they produce cheaper energy than fossil fuels. About 250 gigawatts per annum of solar and wind is being installed globally, doubling every three to four years

Densely populated coastal areas – including Japan, Korea, Taiwan, the Philippines, Vietnam and northern Europe – have vast offshore wind resources to complement onshore solar and wind.

What's more, densely populated Indonesia has sufficient calm tropical seas to power the entire world using floating solar panels.

Will international markets need Australian energy for when the sun isn't shining, nor the wind blowing? Probably not. Most countries have the resources to reliably and continuously meet energy demand without importing Australian products.

This is because most countries, including Japan (and, for that matter, Australia) have vast capacity for off-river pumped hydro, which can store energy to balance out solar and wind at times when they're not available. Batteries and stronger internal transmission networks also help.

Australia's prospects

Getting rid of fossil fuels and electrifying nearly everything with renewables reduces greenhouse emissions by three quarters, and lowers the threat of extreme climate change. It eliminates security risks from relying on other countries for energy, as illustrated by Europe's dependence on Russian gas.

It will also bring down energy costs, and eliminates oil-related warfare, oil spills, cooling water use, open cut coal mines, ash dumps, coal mine fires, gas fracking and urban air pollution.

Australia's coal and gas exports must decline to zero before mid-century to meet the global climate target, and solar and wind are doing most of the heavy lifting through renewable electrification of nearly everything.

But as our research makes clear, while Australian solar and wind is better than most, it may not be enough to overcome the extra costs and losses from exporting hydrogen for energy supply or chemical production.

One really large prospect for export of Australian renewable energy is export of iron, in which hydrogen produced from solar and wind might replace coking coal.

This allows Australia to export iron rather than iron ore. In this case the raw material (iron ore), solar and wind are all found in the same place: in the Pilbara.

While hydrogen will certainly be important in the future global clean economy, it will primarily be for chemicals rather than energy production. It's important to keep perspective: electricity from solar and wind will continue to be far more important.

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Start a New Habit in '22 – Back Up!

By Kurt Jefferson, Editor, CKCS Newsletter
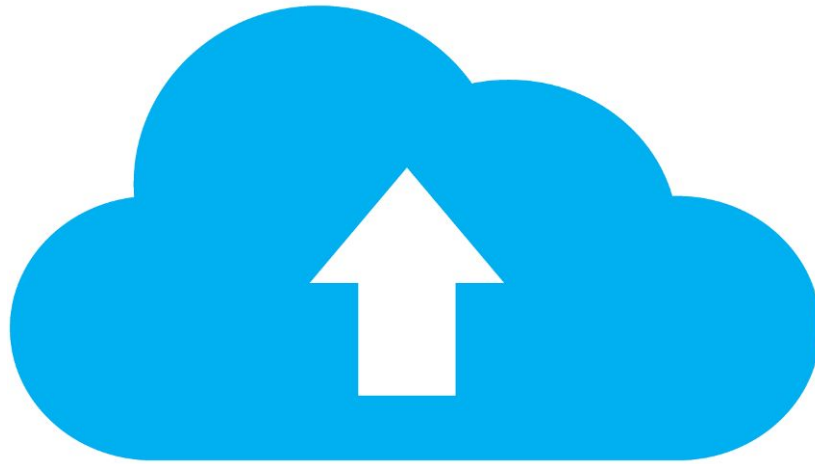
As we start a new year, it's a great time to start a new habit – back up your PC or Mac data. It's easier than ever.

The review site, The Wirecutter, has just updated its "How to Back Up Your Computer" website for both macOS Monterey (the new Mac operating system to be released soon) and Windows 11 (the new Microsoft operating system to replace Windows 10).

You should know that both computer operating systems provide free built-in backup services. You supply the external hard drive, and your PC or Mac does the rest of the work.

The Wirecutter writes, "Windows includes a free backup utility called File History, which stores versions of your files on an external drive. So, you can also roll back to earlier versions on top of backing up files. Backups happen automatically once File History is set up."

For many years, Apple has provided a similar automatic back–up system for Macs called Time Machine. Wirecutter adds, "Like Windows File History, Time Machine takes snapshots of files and stores them on your external hard drive."

If you've never used either File History or Time Machine, check out the updated Wirecutter website, which offers step–by–step instructions on backing up your data using both systems.

Many computer users want to go further than backing up their data on an external hard drive. They want to back up to the cloud in case the external hard drive dies or turns up missing.

The Wirecutter has chosen the cloud backup system, Backblaze, as its preferred company. Part of the reason: It's very simple to use.

"By default, Backblaze automatically backs up almost everything on your computer, including common folders like the Documents folder, your user folder, and the Photos folders. The only folders Backblaze doesn't back up are "operating system, application files, empty folders/directories or temporary internet files." (Backblaze will also back up external drives connected to your computer, but we recommend doing this only for stored files, not Time Machine or File History backups.)," adds The Wirecutter.
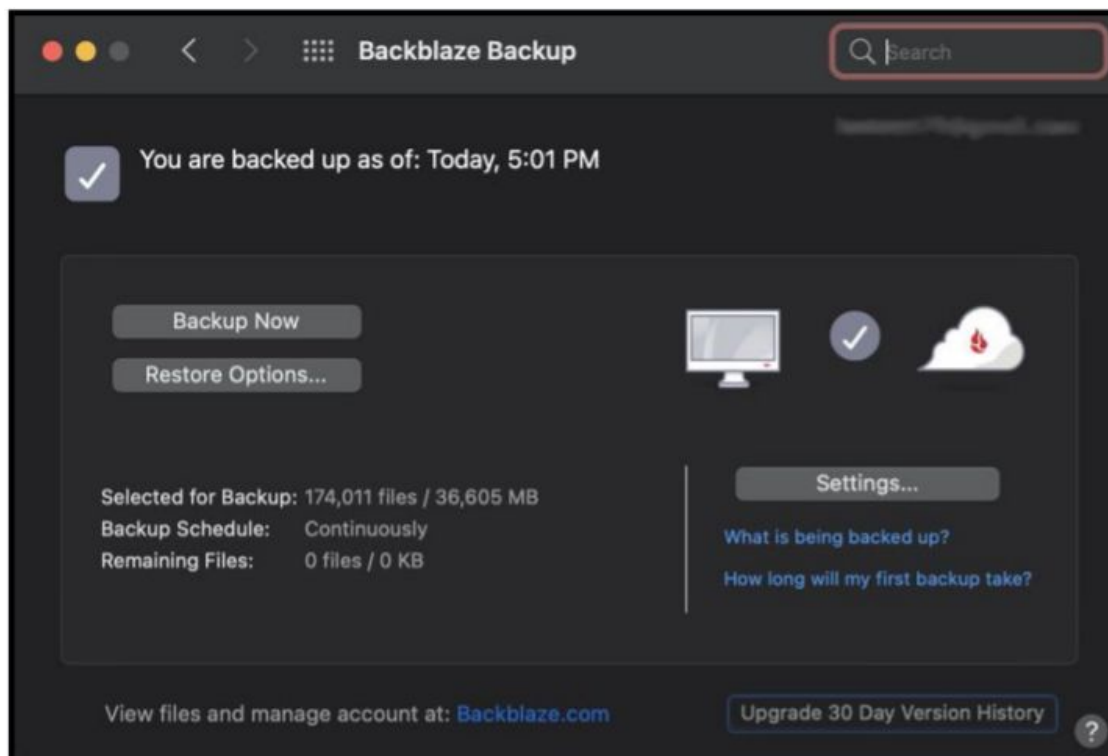
I've used Backblaze for a while to back up data on two Macs.

If you don't want to use Backblaze, there are plenty of alternatives, including:

- iDrive

- SpiderOak ONE

- Acronis Cyber Protect Home Office

- Zoolz Home Cloud Backup

- Duplicacy

- Restic

- sync.com

- CrashPlan

- Back4Sure

The point?

If your hard drive or solid-state drive crashes, if you suffer big–time software corruption, or other troubling issues strike, you can rest easy. That's why backing up is a no-brainer.

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