OTTAWA PC NEWS

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PRODUCT REVIEW

When Good Disks Go Bad – Part 1

by Alan German

You insert your external drive. Windows coughs and splutters, and the dreaded - your disk is not accessible - message box is displayed! This happened recently to a friend who is an avid nature photographer. On her return from Uganda she plugged in a 32 GB SDcard, nominally containing over 1000 photographs, and found that she was unable to access any of the images.

So, now what? Well one option, offered by the service department of a big-box computer store was to hand over the memory card – and $300 – and see if the files could be recovered. Another option is the do-it-yourself solution. Find some disk recovery software and use it to try to recover the disk's contents.

Now, while I am a huge fan of free software, the bad news is that I am not aware of any such products that will recover data from large-capacity disk drives. Sure, many commercial packages offer trial versions to provide recovery capability, but these always seem to be limited to something like the first gigabyte of recovered files. Addressing the needs of larger data recovery efforts requires use of the full-blown package.

So, it may well be possible to use a trial version of some data recovery software to check out the possibility of accessing a corrupt drive, but it will almost certainly be necessary to purchase the full commercial package in order to recover all the data from the disk.

Fortuitously, for my friend, around the time of her issue with the SDcard that had gone bad, I had been approached by MiniTool to review their Power Data Recovery software. Initially, I had declined to undertake the review since I couldn't see how to meaningfully do so without having a corrupted drive to work on. Clearly, my friend's SDcard provided the perfect candidate for a real-world test of the program. So, armed with a licensed copy of MiniTool's Power Data Recovery software, I was ready for the challenge.

Downloading and installing the software was simple and straightforward. The program's main screen provides access to a number of modules. My first choice was the sub-program named Digital Media Recovery since this seemed to be the most appropriate potential fix for the SDcard in question.

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Inside this issue:

Next Meeting: WEDNESDAY, October 11th, 2017

October Raffle

You insert your external drive. Windows coughs and splutters, and the dreaded - your disk is not accessible - message box is displayed. You just lost 1000 photographs on the 32 GB SDcard from your digital camera! But, don't despair, if you are the winner of our October raffle, you will have a fully-licensed copy of **MiniTool's Power Data Recovery** software in your toolbox. This package is specifically designed to recover lost files from various disk storage media, and can certainly do so (see the article *When Good Disks Go Bad* in this issue of the newsletter). Power Data Recovery has a retail value of about $100.00 (US $89.00), so it's well worth taking a chance on our raffle.

As usual, tickets are $1 for one, $2 for three, or $5 for ten.

Coming Up…

➔Wednesday, October 11th, 2017

Speaker: Mark Lamarre, Cumulus Dental
Topic: *TBA*

November 8th, 2017

Speaker: Tim Trinh, IMT Solutions
Topic: *TBA*

December 13th, 2017

Speaker: Nick Quain, Cellwand
Topic: *TBA*

September Prize Winners

Tim Hillock won our raffle and will be receiving an Xtreme Audio Pod bluetooth Mini Speaker.

Our door prize of a brand spanking new keyboard was won by **Howie Macumber**!

Congratulations.

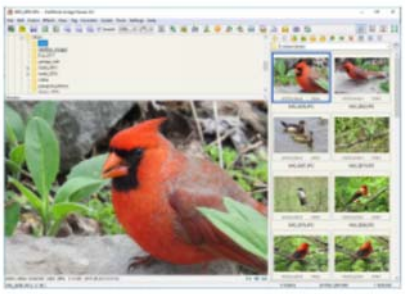
*For meeting updates and additional details, visit http://opcug.ca and click on the **MEETINGS** button.*

2017 CALENDAR

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

CLUB LIFE

Digital Photography Workshop—there's still room!



This September, the club is offering a Digital Photography Workshop with a variety of technical sessions designed to help you take better pictures with your digital camera, and to allow you to efficiently manage all the photographs on your computer. The workshop will be held on Saturday, September 30, 2017 (10:15 am to 4:45 pm) at the Elmvale Acres branch of the Ottawa Public Library.

The cost to attend the workshop is just $40.00. This will include coffee breaks and the chance to win a copy of ON1 Photo RAW 2017. This software is an all-in-one photo organizer, editor, raw processor, and effects application (see: https://www.on1.com/products/photo-raw/). The software is valued at US$120.00 and can be installed on up to five Windows or Mac computers. OPCUG extends its grateful thanks to ON1 for their support of our club by providing this valuable door prize for the workshop.

Space at the workshop venue is limited and participation will be restricted to the first 35 registrants. Full details about the workshop and the registration process can be found on our web site at: http://www.opcug.ca/public/workshops/2017

Did you know?

There are still three Tech Talk sessions remaining in the series. Each session will be held from 7:30 to 9:00 pm on the second Tuesday of each month, in the Amphitheatre of the Heron Road Community Centre. Our next Tech Talk takes place on October 10th. 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

PRODUCT REVIEW

Avoiding Disaster in Disaster Recovery—Part 2

by Alan German and Chris Taylor

In Part 1 of this article we saw how to make sure that at least part of our disk image had been recovered successfully by recovering and checking both a disk folder and a data partition. We are now ready to take the ultimate challenge. We will make an image of an entire disk drive, blank the disk, and then recover the disk image in order to restore the disk precisely to its initial state.

But first, let's hedge our bets one more time. So far, we have only dealt with data files and partitions. Can we also check that our disk imaging software works on a partition that holds an operating system and a bunch of applications? Well, sure we can. For those of us who are at ease with disk partitions, that's actually a very simple process.

Linux OS install/recovery

In fact, it's possible to check that an operating system partition can be successfully restored without affecting the Windows system at all. The trick here is to install Linux in a separate partition on the hard drive (actually two partitions because Linux also uses another partition as a *swap area*). This is how Linux is normally installed. It produces a dual-boot system, with a boot menu controlling whether Windows or Linux is loaded when the machine is booted up.

Once Linux has been installed, and can be seen to be running successfully. you can boot back into Windows, image the entire disk, delete the Linux partition, and then restore just the Linux partition. Reboot the computer and ensure that the Linux side of the box still boots and runs normally.

So far, so good. Now for the ultimate test!

Blow-away the entire disk!

A really good time to perform an absolute check on your imaging/recovery systems is either at the start-of-life or end-of-life cycle of your computer. When the computer is new, you have little to lose if an image recovery goes south. It is easy to use the rescue media that came with the machine, or the one you created as the very first thing that you did with your brand new computer (this was the very first thing was it not?), and simply reinstall the operating system. Note that you will also need to reinstall any applications that you added, such as Microsoft Office, using the original installation media for such software.

Similarly, if you have a machine with an operating system that has reached its end-of-life (e.g. Windows XP as of April 8, 2014, or Windows Vista on April 11, 2017), then you really have nothing to lose by using this box as a test system. At the time of writing, Alan has a Vista-based laptop that has reached the April 11th end point and is no longer supported by Microsoft in terms of security patches.

The laptop already dual-boots Linux and the plan is to disable Internet access on the Windows side of the box and continue to use Linux as normal. This machine is to be used as the "grand experiment", trashing the hard disk, and recovering the entire system from a disk image.

So, the process is basically a combination of everything noted previously. We create a rescue disk for the disk imaging software. Next, we make a full disk image of the hard disk, storing the image on a large-capacity external USB drive. Now, we boot from the rescue disk and make sure that the imaging software can access the newly-created disk image.

Now, the hard part. We blow-away everything on the computer's hard disk. The easiest way to do this is to run a stand-alone disk partitioning program (such as GParted that runs as a live-USB) and delete all of the hard disk's partitions, creating one huge block of unallocated space.

Finally, we run the rescue disk and recover the full disk image to the hard drive. We bite our fingernails for around 45 minutes and – bingo! – we are back in business. Disk imaging works!

Some other considerations

A couple of final thoughts on preparing for disaster…

Some disasters can take out your normal backup drive in addition to your computer's hard drive. Examples include fire, theft, electrical surges, and malware. Although these disasters are less likely than a simple hard drive failure, you can recover from them by having an off-site backup.

Periodically do a full backup to a separate backup drive and store it somewhere else. This might be a friend's house, or a desk drawer at the office. Since the likelihood of needing this off-site backup may be low, the frequency of creating it will probably be less than your normal backup, which might be daily or weekly.

If you create incremental backups to save space, the backup set consists of a full backup, and then a much smaller incremental file created every time the backup runs, which contains all the changes since the last backup. There are two potential issues with incremental backups – speed of recovery and possible corruption of an incremental file.

When you are faced with a complete restore, the backup program has to start with the full backup and then apply every incremental backup. While this process is automatic, if you have dozens or hundreds of incremental backup files, this can take a long time.

A more serious concern is if you have any corruption in an incremental backup file. Typically, you can only restore all modifications up to that incremental file. Any changes after that incremental backup was run will be lost.

Both of these issues can be dealt with by limiting the number of incremental backups created. Some backup programs can automate the process such that you can specify when to create a new set of backup files. Alternatively, you can periodically and manually move a backup set (the full backup and all subsequent incremental files) to another folder. The next time the backup runs, it will create a new full backup, followed by incremental files as usual.

Conclusion

While nothing about disk image backups can be guaranteed, taking the steps noted in this article can at least provide some assurance that recovery from backup images is likely to be successful in the event of a disk disaster. Certainly, each of the authors of this article has had occasion to recover individual files and folders, disk partitions, and even entire hard drives. And, with the pre-planning that we have described, these efforts have been successful. We routinely use imaging software to help protect our various computer systems and we highly recommend this strategy to others. So, have you backed up your computer lately? Are you going to…?

ARTICLE

Automated Telephone Adapter (ATA) Setup

and other ways to reduce Personal Telecommunications costs

by Doug Poulter

Canadians have amongst the highest telecommunications bills of users of any country. Years ago many of us went from renting, to buying our landline telephone sets to save on monthly fees.

Now that our telephone and cable companies also sell us stable internet services, the time has come for most Canadians with home internet (other than dial up) and our legacy landline phones to take the next step and buy, the minor additional equipment and services to:

- eliminate all ongoing monthly landline legacy telephone fees, (except for fees associated with calling long distance beyond the 10 Canadian provinces and the 48 continental US states),
- eliminate monthly cable TV fees, except when one is a dedicated North American team or league specific fan,
- reduce our need for high cost monthly cell phone plan fees.

This written article principally details the setup of home equipment and services to provide "voice over internet protocol (VoIP)" telephone services. Of similar note, while not explored in further detail here-in, additional home telecommunications services savings are available:

• https://www.howtogeek.com/170940/8-reasons-you-should-be-using-google-voice-if-youre-american/ documents that for those on cell phones and/or tablets, there are apps like:

• GrooVe IP at https://play.google.com/store/apps/details?id=com.snrblabs.grooveip and

• Talkatone at http://www.talkatone.com/ (•In addition there are Nimbuzz, Fring & Tasker (used with a 3rd party plug in called Locale GV Settings)) that allow one to receive and place calls over internet enabled WiFi or cellular data connection — without need for cell phone minutes. These apps can be used by anyone to place free calls to the US or Canada, but they become a full sending-and-receiving solution when paired with a Google Voice account, an appropriate ATA as selected below, and an optional $25 adapter.

There is also CSipSimple that can link your Android phone to your SIP provider via WIFI.

• For TV, off air antennas give excellent quality signals for local stations, and internet TV streaming boxes, as cheap as $50, give the equivalent of nonlocal cable TV services free, though do not generally provide free viewing of major North American sports events. 2 reviews of some available options are at:

http://cutmybills.ca/cut-cable-tv-bill/online-streaming-options-to-replace-my-cable-tv/which-roku-should-i-buy-roku-player-comparison-buying-guide-2017

http://cutmybills.ca/cut-cable-tv-bill/online-streaming-options-to-replace-my-cable-tv/android-tv-box-review-skystream-one

In addition, one may use a Raspberry Pi (<$50) or MS-Windows 10.

• While we all need an internet connection, most of us could greatly reduce our bill if we shared our internet with our neighbour(s). Neighbours need to elect a trustworthy neighbour in a suitable location to power a central hub modem from which the local area network (LAN) ethernet cabling extends. This location might be in a box mounted on the fence at a shared corner of four lots, with additional cable lengths so the box can be relocated to any of 4 neighbours, so as to provide for easy re-location should the trustworthy neighbour move.

When a length in excess of the maximum (300' copper cable lengths or in the case of plastic fiber ~ 1000 feet), is needed to get to a neighbour's home, a router/ repeater/splitter can be placed in between each length of cable to regenerate the signal. To support distribution of the LAN to multiple devices within any home, another router/ splitter is required. To maximize resilience (from events such as the neighbour moving away, or being out of town when a hardware failure occurs), and minimize cabling costs, it might be appropriate to locate equipment in a locked weatherproof box(es) at a shared back lot corner(s).

For home landline phones, **one time** payments totalling less than Cdn $200 can end monthly fees of 1 or 2 phone lines. The payments purchase 1) an ATA that routes your phone calls on and off your home internet; and 2) services of an internet telephone service company (ITSC) to do the same elsewhere. Specifically for Candians, I recommend the payments purchase:

1) a US$70 Obihai model OBi202 automated telephone adapter (ATA), a box 4.1 x 4.5 x 1.2", that you can relocate to any reliable internet connection world wide when you move or travel. (Visit http://www.obihai.com/how-to-get for where or how to purchase an Obihai model OBi202. The Obi202 supports [optional Obihai adapters(US$): $27 wireless LAN, $23 wireless bluetooth, and but get a now desupported $67 OBi110 if needing to reliably directly interface to an old telephone (POTS) line], the OBiON softphone app for Android and iPhone, and Google Voice support, that via ObiTalk setup makes phones connected to the ATA be recognized by Google Voice as US based, personal computer software telephones. Google Voice support was temporarily broken 2014/05 through official restoration 2014/09, by Obihai software updates. Google Voice and related offerings are explained at https://support.google.com/voice/answer/115061?hl=en and its links.)

Continued online

The rest of Doug''s article can be read online in PDF format at:

http://opcug.ca/public/Articles/ATAsetup.pdf (120 KB PDF)

*The article continues at item **2)** in the middle of page 2.*

When Good Disks Go Bad *(Continued from page 1)*

Starting the recovery process brought up a dialogue box indicating the progress of a scan of the SDcard and, most heartening, an indication of the number of files that had been recovered. Another useful feature of the display was an indication of the likely time remaining to complete the scan. Since this was of the order of 25 minutes, it was obviously time to make a pot of coffee!

Eventually, without me doing anything more than enjoying my coffee, the display changed to advise me that 1030 files had been recovered. The 24.91 GB of data comprised RAW digital image files which were contained in a number of folders and sub-folders. So, it appeared that both the individual data files, and the file structure on the SDcard, had been recovered. I was now able to select all the recovered files and folders and save them permanently to the hard disk on my computer. Success!

Flash Drive Recovery

The second test that I performed was to check the Undelete Recovery module. In this case, I deleted all the files from a USB flash drive. I copied a number of files – a selection of jpg, exe, docx, txt and pdf files – to a folder on my hard drive, and then copied the files from this folder onto the USB drive. Then, I deleted the files from the flash drive so that it was nominally blank. Running the Undelete Recovery process from the Power Data Recovery software very quickly recovered the files on the USB drive.

Most of the files were restored to their original state on the USB drive. A couple of files had the first characters of their file names replaced with the underscore character. This was not totally unexpected since this character substitution is part of the process by which Windows marks files as being deleted. Restoring the original file names was simply a matter of renaming the restored files (e.g. _SC_0184.JPG was renamed to DSC_0184.JPG.)

Once this process was complete, a bit-for-bit file comparison, between the restored files on the USB drive and the original files in the folder on the hard disk, confirmed that the recovery process had been 100% successful. Another triumph for Power Data Recovery!

CD Recovery

The software developers indicate that the CD/DVD Recovery module "is designed specifically to recover lost and deleted files from damaged, scratched or defective CD and DVD disks". I happened to have a CD that was refusing to open one of several hundred digital photos that were backed up on the disk, and so I opted to try to recover this specific file. The CD/DVD Recovery module's operation was very similar to that of the previously-used Undelete Recovery module. I chose to conduct a Full Scan of the 698 MB CD. This took about five minutes and identified a number of files and folders. I selected the "corrupted" image file, which displayed correctly in the preview window, and saved it to Drive D: (the data partition on my hard disk).

The only real issue was that, after having saved the file, I couldn't immediately locate it on the hard drive. It wasn't saved to the root of the disk, rather it was stored as D:\ISO9660 & Joliet\$Root1\MON_001\001.JPG which was clearly a function of the original file system on the CD-ROM. However, once I realized that the file had been saved to a folder, it was simple matter to initiate a bit-for-bit comparison between the recovered image and a copy of the same file from a second backup on an external hard disk. The recovered file proved to be identical to the backup showing that Power Data Recovery's third module was completely successful.

It turns out that I didn't actually need to scan the CD, I could also have used the Open control button. For my test CD, this listed a number of tracks and the available files and folders on these tracks. Once again, the file I wanted to recover was listed, displayed in the preview window, and could be copied from the CD to my hard drive.

The CD/DVD Recovery module includes support for ISO9660, Joliet, and UDF formats, RAW files, and can process multi-session disks. This can lead to a fairly complex directory listing where, for example, my disk contained listings for the same files and folders in different sections (e.g. ISO9660 & Joliet) or tracks (Track01, Track02, etc.). The good news I that it didn't seem to matter which listed file I chose to recover.

The other two modules in Power Data Recovery are Lost Partition Recovery and Damaged Partition Recovery. Each of these modules is applicable to the partition structure of a hard drive. Using these modules is a little trickier than those for flash drives and CD-ROM's so we will leave this discussion for Part 2.

Bottom Line

Power Data Recovery (US $89.00)
MiniTool Solution Ltd.
Vancouver, British Columbia
https://www.powerdatarecovery.com/

Part 2 of this article will be in the November issue of Ottawa PC News.

OPCUG Free Software Guide—Part 75

Compiled by Alan German

This guide features an annotated list of free computer programs. As can be seen from the title, this is the 75th edition of the guide, a milestone that calls for something special. In fact, it's high time for a little fun and games, so this issue will be focussed entirely on gaming software - from old standards to cutting edge technologies - and all in the form of free and open-source packages. As usual, 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.

PlanetSide2

Join an all-out planetary war, where thousands of players battle as one in strategic, targeted missions against opposing empires. Utilize infantry, air and ground vehicles to destroy your enemies in this massive scale, first-person shooter.
Web Site: https://www.planetside2.com

Wonderputt

Play this award-winning adventure golf game using your browser. Each of the 18 holes have their own unique animated features encompassing all manner of scientific illustration, from geographic encyclopaedias to instruction manuals, but with cows, toads, ski slopes, torpedoes, and a sprinkle of alien abduction for good measure!
Web Site: http://tinyurl.com/wonderputt

123 Free Solitaire

Need a Solitaire fix? This free package contains all the classics – Klondike, FreeCell, Spider Solitaire, Forty Thieves – and many others. You can fully customize the design of the playing cards and backgrounds. Each game has more than nine trillion possible shuffles to keep you busy for hours, days or weeks! Runs on Windows 8, Windows 8.1 or Windows 10.
Web Site: http://www.123freesolitaire.com/

Tank Hero

Fast paced 3D tank action on your Android phone. Take out your enemies with cannons, heat seekers, and howitzers. Battle against cunning enemies and become the Tank Hero!
Current Release: Version 1.5.11
Web Site: http://tinyurl.com/7fnjous

SuperTuxKart

This open-source 3-D arcade racer has a variety of characters, tracks, and modes to play. The aim is to create a game that is more fun than realistic, and provide an enjoyable experience for all ages. Available for Windows, Linux and OSX.
Current Release: Version 0.9.2
Web Site: https://supertuxkart.net

Frogger

This classic arcade video game, developed by Konami in 1981, is now available to play on-line. Your objective is to guide a frog across a busy road without being flattened, and to cross a river while avoiding snakes, otters and crocodiles!
Web Site: http://www.frogger.net/

Crash Dive Lite

On your Android smartphone or tablet, take command of a U-boat prowling the Atlantic. Locate convoys, sneak past the escorts and torpedo the transports. Or surface, and use your deck gun in a daring night attack. When the enemy counter-attacks with guns and depth charges, drop decoys and sneak away... or reposition and hit them again!
Web Site: https://tinyurl.com/CrashDiveLite

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 **Bush 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 $3 after 5pm.
Details at http://opcug.ca/public/regmtg.htm

OPCUG Membership Fees:	$25 per year
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Web address:	**http://opcug.ca**
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OPCUG
Users helping users

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.