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The Digital

# Viking



**Twin Cities**

PC USER GROUP

NEWSLETTER

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*TC/PC Exists to  
Facilitate and Encourage  
the Cooperative Exchange of  
PC Knowledge and  
Information Across  
All Levels of Experience*

**December 2017**

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## General Meeting

**Tuesday, December 12, 2017**

**7:00 PM**

### Computers in Manufacturing:


**A Brief History and Personal Experiences**

**Presenter: Bill Ryder**

**Summit Place**

**8505 Flying Cloud Drive**

**Eden Prairie, MN 55344**

Bill Ryder, President of TC/PC, has been running his own engineering firm since 1993. His firm, Ryder Engineering, provides mechanical design engineering services to a broad range of clients. At this month's meeting Bill will be discussing the history of computer controlled machined tools. Starting with the advent of NC in the early 1950's through today's modern Computer Aided Design (CAD) and Computer Aided Manufacturing (CAM) systems. He will show manufacturing samples and discuss the machinery that made them. This should be a very informative meeting. Don't miss it. 

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Tech Topics at 6PM with Jack Ungerleider

TC/PC is a  
Member of



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**24-Hour Information • [www.tcpc.com](http://www.tcpc.com)**

Application form inside back cover

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# The Digital Viking

The Digital Viking is the official monthly publication of the Twin Cities PC User Group, a 501(c)(3) organization and an all-volunteer organization dedicated to users of IBM-compatible computers. Subscriptions are included in membership. We welcome articles and reviews from members. The Digital Viking is a copyrighted publication and reproduction of any material is expressly prohibited without permission. Exception: other User Groups may use material if unaltered and credited.

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Full page (7½ x 9½)	\$100.00
Two-thirds page (7½ x 6)	80.00
Half page (7½ x 4¾)	65.00
One-third page (7½ x 3)	50.00
Quarter page (3½ x 4¾)	40.00
Member Bus. Card (2 x 3½)	10.00

Multiple insertion discounts available.

Contact Sharon Walbran at: SQWalbran@yahoo.com

Deadline for ad placement is the 1<sup>st</sup> of the month prior to publication. All rates are per issue and for digital or camera-ready ads. Typesetting and other services are extra and must be requested in advance of submission deadlines.

Payment must accompany order unless other arrangements are made in advance. Place make checks payable to: **Twin Cities PC User Group**

## TC/PC 2016-2017 Board of Directors

Meets once or twice per year. All members welcome to attend.

Visit [www.tnpc.com](http://www.tnpc.com) for meeting details.

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## TC/PC Member Benefits

Product previews  
and demonstrations

Special Interest Groups  
Monthly Newsletter

Discounts on products  
and services

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Up to 5 newsletters mailed to  
your site  
(only a nominal cost for each  
additional 5 mailed)

## Newsletter Staff

Editor Sharon Walbran

Contributors:

Jeannine Sloan

# Upcoming Meetings

Tuesday, January 9th, 7:00PM—Show Us Your Gadget

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## Educating My Phone - Graduating to a Smartphone

by Greg Skalka, President, Under the Computer Hood User Group, CA  
July 2017 Drive Light, [www.uchug.org](http://www.uchug.org), president (at) uchug.org

Though I have built many computers over the years, and used and experimented with lots of technology, for the longest time I have resisted getting the one tech item that now seems to be pervasive in our society - a smartphone. I've had mobile phones, but only "dumb" cell phones. I've had flip phones that could only place voice calls, and a slide phone that allowed talking and texting, but until recently I'd resisted getting a phone that provided access to the internet. Now at last I am "graduating" to a true smartphone.

Now I'm not opposed to technology. I am an electrical engineer by profession, and currently work for a company designing digital radio systems that may be used to connect cell phone towers to the phone network. I have used computers since before the original IBM PC-XT. I have owned and used all manner of computers, laptops, tablets, Chromebooks, music players, GPS receivers and digital cameras and video recorders. I pay for a mobile phone plan that covers three smartphones (my wife and daughter have iPhones, my son has a Google Nexus), but I've never graduated from my dumb phone. Until now.

There are a lot of reasons I've held back until now. I'm pretty value-conscious (some would say cheap) and for a long time I felt having a smartphone was not worth the cost - mainly in the cost of the phone plan. When data plans were around \$40 a month, and my home broadband internet service was about the same, it made me wonder why I had to pay twice; once to have internet access at home, and again to have it away from home. The phones themselves are what I would consider pretty pricey as well. While none of the computers that I use today (desktop or laptop) cost me more than \$500, this appears to be about the median price for smartphones.



While the capabilities of smartphones are impressive, the cultural phenomenon of the smartphone is not (at least to me). I really would like to be able to access the internet from practically anywhere, and look with a bit of envy at those searching the web and getting real-time traffic information while out and about. To scan a product bar code in a store and then search the web for additional information, alternatives and better pricing is very powerful. I don't feel a great need to

have my emails with me wherever I go, however; I think being able to communicate via text messaging is plenty good.

For all the good that smartphones represent, I believe there definitely is a dark side. It seems almost everyone has a smartphone, and many can't seem to put them down. Opioid drugs are very useful in pain treatment, but when abused, they can be very addictive, and ultimately destructive. I see the same things in smartphones - a great and useful tool that has the potential for great abuse. Now maybe great abuse on an individual scale is uncommon, but I worry what these devices are doing to our society. I all too often see families seated at a table in a restaurant, with each family member devoting their full attention to their own smartphones rather than each other. My wife suffers from motion sensitivity and so does the driving whenever we travel together; this gives me the opportunity to observe the drivers in the cars around us. I've found it is not unusual to see half of those drivers holding their phones while driving, presumably talking, texting or worse. Unlike laptop computers, smartphones have had traffic deaths attributed to their use, and laws enacted to hopefully prevent their use in situations like driving, where the distraction could be dangerous.

While I was concerned about the added cost, part of my reluctance to getting a smartphone was my desire to not risk becoming "one of them." those zombie-like people that can't put their phones down. I never want to ignore those I am with in deference to these little electronic gizmos, or risk stepping out in front of an oncoming car because I've tuned out everything but that little device in my hand. Stephen Hawking and Elon Musk are smart guys, and they have both expressed concerns about the potential threat to the human race that artificial intelligence could pose if its development continues. In the same way, I fear we are well on our way to trading away our humanity for these addictive little handheld screens.

So, what made me change my mind and submit to the dark side of smartphones? Is it similar to the argument that "it's not guns that kill people, but people that kill people"? I do hope (and believe) I can ignore their siren song and not use a smartphone in an overtly antisocial manner.

In the end, several factors conspired to put a smartphone in my hand (unlike my slide phone, it is too big for my pocket). Though my slide phone served me well for many years, it has started to become unreliable. Though its built-in camera is poor by current digital camera standards, I found it very handy simply because it was almost always with me. I became dependent on its ability to photograph store product tags for items I wanted to research, and send photos of what I'm doing to my kids. Recently, however, it had started to fail me, more often than not taking photos that look like they were taken in Andy Warhol mode (colorful and cartoonish). Finally, attempts to use the phone camera were greeted with the screen message "Camera not available." It was not the lack of the internet; it was the lack of a camera that pushed me over the edge.

At the same time, I found that phone plans have changed, with data included in our current T-Mobile family plan for each of us, whether we were using it or not. With extra

charges for data overages replaced with data throttling when your monthly limit was reached, my concerns over an increasing bill were eliminated. I had been reluctant to change to a smartphone as I thought it would result in a bigger bill due to adding a data plan for it. As it turned out, I had been entitled to use over 2 GB of mobile data all along (and had only been using a few MB of data sending photos with my slide phone). I had the power to have a smartphone all along; all I had to do was click my heels together in the T-Mobile store (so to speak).

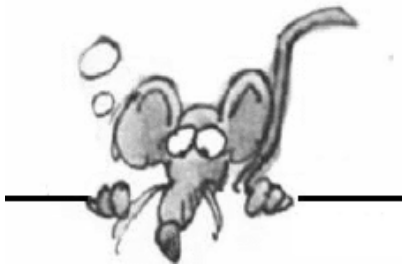
With my slide phone broken and data available in my phone plan, the only remaining issue to graduating to a smartphone this June was the device. Since my needs were modest, I expected the price to be modest as well. I consulted with my son, also an electrical engineer, on his choice for a smartphone, but found he had just copied a more knowledgeable friend when he bought his Google Nexus off the web. I looked on Amazon for unlocked smartphones and found promising candidates in the \$120 to \$170 price range, but concerns about being able to use these on our plan had me look at the T-Mobile web site. The best candidate seemed to be a Samsung Galaxy J3 Prime, which could be bought outright for \$150.

Heading with my wife to the T-Mobile store (the phone account is in her name), I felt kind of like a vegan heading to In 'N' Out for a Double-Double, or a diabetic heading to the candy store. Like the recipient of a mail-order bride, I was filled with both excited anticipation and apprehension. Having a smartphone would allow me to do many things I had only dreamed of, like get answers to questions myself when out, rather than have to ask my wife to look things up on her phone. I could get apps and do fun things like check on traffic and control lights at home. Having a smartphone might change me, however. I might become antisocial. I'd have to find a way to carry this larger object and avoid breaking it or losing it. Would I be satisfied with what I had or want more?

At the T-Mobile store, I was able to have my contacts and my few feeble photos transferred from my slide phone to my new smartphone. They took out the 16GB micro SD card from my old phone and put it in my new phone, but I immediately began plotting to get a much larger SD card for the smartphone. I looked at cases for my new phone at the T-Mobile store but they all seemed expensive. I was able to get a nice case with belt clip (my initial experiment with carrying the phone) for a lot less. I didn't take the phone out much until I'd gotten the case, as I was concerned about damaging it. This caution proved to be justified, as I've already dropped the smartphone in the Fry's parking lot once (but the case protected it).

Now I've moved into the 21st century, joining the over 3 billion humans that use smartphones. The phones may be smart - let's hope all the users remain so. 📱

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# NIBBLERS

By Jeannine Sloan

## Relief from Those Annoying Robocalls

FTC rolls out new system to track — and block — calls

“Sharing the critical information from consumers’ unwanted call complaints to enable industry innovators to stop illegal robocalls is exactly the type of public-private partnership the FTC champions,” said Acting Chairman Maureen K. Ohlhausen.

Here's how you can help:

- Make sure you subscribe to the Do Not Call list. If not, you have to wait 31 days to file a complaint.
- If you receive unwanted calls or robocalls in violation of the FTC policy, take notes. You'll want to gather this information from the call: incoming phone number, date and time of call, what the call was about, and whether it was a recording or live person.
- File a complaint on the FTC website. The agency has made its complaint form simple, with numerous dropdown menus to help you through the process.

The full article is at this AARP site:

<http://tinyurl.com/y7wvmgl6>

## Windows 10 Fall Creators Update Includes Ransomware Protection

There are three primary ways to avoid ransomware:

- Be careful: Don't just click every link that crosses your path and don't share authentication information with anyone. Social engineering is still the primary way criminals gain access to your devices.
- Apply security patches: New security vulnerabilities for just about every operating system and just about every application are being discovered nearly every single day. Applying patches and fixes immediately upon release is just the cost of living in a connected world.
- Install ransomware protection: Anti-malware security applications are now available to combat this latest threat and should be installed and activated. In fact, the Windows 10 Fall Creators Update includes Microsoft's latest anti-ransomware application as a built-in part of the operating system. BUT, you must choose to turn it on, it is OFF by default. To do that TechRepublic has an illustrated Tutorial here:

<http://tinyurl.com/yc5cyj3>

## Blockchain's Explosive Growth

Blockchain developers now rank second among the top 20 fastest-growing job skills, and job postings for workers with those skills have more than doubled this year.

<https://www.computerworld.com/article/3235972>

## Microsoft's New Hardware/Firmware Security Standards

Want to make your Windows machines highly secure? Make sure these hardware and firmware standards are in place. Read TechRepublic's article for details:

<http://tinyurl.com/yc7ajkq9>

## Smart Phone Tips

Use the volume button to snap pictures. Use airplane mode to speed up charging.

More like this at:

<https://www.t3.com/news/23-smartphone-tricks-to-impress-your-friends>

## Security for Mobile Devices

"Mobile malware has been on the rise drastically in last couple of years," says Nathan Collier, Senior Malware Intelligence Analyst at Malwarebytes. "Everything from backdoor malware that steals personal information to ransomware that locks your phone until payment is made exists in the mobile space. With millions of malware samples in the wild, there is no reason not to be concerned."

**Be proactive about your mobile security Read this or a similar article and apply the ideas:**

<https://blog.malwarebytes.com/101/2016/09/top-10-ways-to-secure-your-mobile-phone/>

## Know Your Device

This site is hosted by T-Mobile but it has tutorials for most devices and topics.

<https://support.t-mobile.com/community/phones-tablets-devices>

## 10 Tips to Extend the Battery Life of Your Mobile Tablets

by Erik Nachbahr, President, Helion Automotive Technologies

Mobile tablets are great for streamlining processes and increasing productivity; that is, until the battery dies just before the afternoon rush begins. Every brand is different, but mobile tablet batteries can last anywhere from five to twelve hours.

To keep your mobile tablets ready for action—and your employees productive—follow these tips for battery care:

- Reduce screen brightness.
- Turn off wi-fi connectivity.
- Turn off location tracking apps.
- Don't turn it off.
- Other settings that can drain battery power include Bluetooth and email
- Don't fully discharge batteries.
- Consider wireless charging pads
- Don't leave your mobile tablets in the heat—or cold. With proper care, your mobile

tablet batteries should last up to two years. Over time, it's normal for batteries to degrade 20% to 30% from their original state. But that degradation happens much faster with careless handling, so follow these tips to help protect your mobile tablet investment. What battery-saving tips do you have? Read more about each hint here:

<https://www.heliontechnologies.com/10-tips-to-extend-the-battery-life-of-your-mobile-tablets/>

## **InPrivate, Incognito or Private Browsing**

This feature mostly does the same thing: allows users to browse the web without saving data like cache, history, passwords or cookies. However, this is done locally, meaning that only people using your computer will not be able to find out what websites you have visited. The websites you visited, your ISP (Internet Service Provider) and, in fact, every server your requests pass through, know what you visited. However, some browsers offer more features for their private browsing mode.

<https://www.digitalcitizen.life/how-browseweb-incognito-all-big-browsers>

## **Types of Software**

System software controls a computer and provides the environment for users to run application software. It is a collection of programs, with different functions and purposes, most notably the Operating System (OS) that controls an entire computer. Also included in system software are utilities and device drivers. In contrast to this, computer users typically run application software to perform tasks, play games, listen to music, and otherwise make use of a computer.

Categories include: Operating Systems, System Utilities, Device Drivers, Other Types of Programs. Read descriptions here:

<http://www.wisegeek.org/what-are-the-different-types-of-system-software.htm>

## **Internet Governance**

Internet governance is the development and application of shared principles, norms, rules, decision-making procedures, and programs that shape the evolution and use of the Internet. This article describes how the Internet was and is currently governed, some of the controversies that occurred along the way, and the ongoing debates about how the Internet should or should not be governed in the future.

[https://en.wikipedia.org/wiki/Internet\\_governance](https://en.wikipedia.org/wiki/Internet_governance)

## **Physics Toolbox Sensor Suite**

This TechRepublic article describes many useful apps for your devices. It seems to me that each could be loaded as needed. A couple of them I will try to remember are the GPS, the Sound Meter and the Stud finder. The Sensor Suite is a single app that uses device sensor inputs to collect, record, and export data in comma separated value (csv) format through a shareable .csv file.

<http://tinyurl.com/ycvjs9oc>



## Check What Windows 10 Version You Have

This method is fast, and it works the same no matter what version of Windows 10 you have. You can use the search box near the Start button, search for “winver” and click or tap the appropriate search result.

## The Future of Drones Depends On Regulation, Not Just Technology

Drones make the extraordinary power of digital technologies physically incarnate. But because they operate in the physical rather than the virtual world, exploiting the many opportunities they offer will depend just as much on sensible regulation as on technological progress.

<http://www.economist.com/news/technology-quarterly/21723000-engineers-and-regulators-will-have-work-together-ensure-safety-drones-take>

Analyze suspicious files and URLs to detect types of malware including viruses, worms, and trojans.

<https://www.virustotal.com/#/home/upload>

## Breakers Need to Become “Smart”

Circuit breakers are thus essential to help prevent electrical fires and stop people from being electrocuted. But they also serve as a distribution point for all the wires in a house, with breakers monitoring the lights and power sockets in different rooms, and separate breakers regulating some individual appliances, such as cookers and water heaters. This makes the breaker box an ideal place from which to manage energy use. <https://www.economist.com/news/scienceand-technology/21731610-old-fuse-box-gets-new-lease-life-smart-circuit-breakers>

## Tesla’s Big Battery

An enormous Tesla-built battery system—storing electricity from a new wind farm and capable of supplying 30,000 homes—will be powered up over the coming days, beating the money-back deadline set by CEO Elon Musk.

<https://www.reuters.com/article/us-australia-power-tesla/teslas-big-battery-races-to-keep-south-australias-lights-on-idUSKCN1C40DD>

## What Is Private Browsing and Which Browser Is Best At It

When you want to hide something that you do online, you use a private browsing mode like Incognito from Google Chrome or InPrivate from Internet Explorer and Microsoft Edge. But, do you know how private you are when using this way of browsing? Can others still see what you are doing online? Also, do you know which browser is best at protecting your privacy? If you want to know the real answer to all these questions, read this article:

<https://www.digitalcitizen.life/what-is-private-browsing-which-browser-is-best>

## Quick Key

Logo+. (period) brings up emoji panel 🐼



# Special Interest Groups (SIGs)

w Work phone h Home phone c Cell phone  
\* Meets at an alternate location

Most SIGs will meet at Edina Executive Plaza, Conference Room #102, 5200 Willson Road, Edina, MN

Confirm with a SIG group if they meet elsewhere.  
For more info contact the SIG Leader(s) listed here.

Get SIG announcements!  
Link from [www.tpc.com](http://www.tpc.com)

## Board of Directors\*

All members are welcome! Check [www.tpc.com](http://www.tpc.com) for location.

**Selected Saturday mornings**

## Linux on Saturday

This is for the Linux newbie and those trying to come over from Microsoft to a different operating system.

**Second Saturday @ 9 AM-Noon**

**Note: No Meetings June-August**

Jack Ungerleider 612/418-3494 c  
[jack@jacku.com](mailto:jack@jacku.com)

## Tech Topics

Technical presentation/discussion on various technical topics from the following areas:

- Web/Internet
- Mobile Devices and Apps
- Playing with Programming
- DIY (3D Printing, R-Pi, other hobby electronics, etc.)

**Second Tuesday @ 6:00-7:00 PM**

Every month  
Right before the general meeting.

Jack Ungerleider 612/418-3494 c  
[jack@jacku.com](mailto:jack@jacku.com)

## Microsoft Access

All levels. Presentations by expert developers within the group and by MS reps.

**Third Saturday 9:00 AM—Noon**

**Note: No Meetings June-August**

Steve Kuhlmeiy 952/934-8492  
[skuhlmeiy@hotmail.com](mailto:skuhlmeiy@hotmail.com)

## Microsoft Office

Addresses the use, integration, and nuances of the Microsoft Office applications.

**Combined with Systems on Saturday**

**Third Saturday of the Month**

**9:00 AM—Noon**

**Note: No Meetings June-August**

Steve Kuhlmeiy 952/934-8492  
[skuhlmeiy@hotmail.com](mailto:skuhlmeiy@hotmail.com)

## Directions to Summit Place for General Meetings:

Proceed to Eden Prairie Center Flying Cloud Drive . [Flying Cloud Drive runs along the West side of the Eden Prairie Center.] Once you have driven past Eden Prairie Center (on the left) along Flying Cloud Drive you will come to a stop light at Prairie Center Drive. The next intersection with a stop light and left turn lane is Fountain Place. Turn left at Fountain Place and go straight into the parking lot. Turn left again to the first covered entry way of Summit Place. There is plenty of parking in the large parking lot in front of the first Summit Place covered entry way. When you enter the door at the first covered entry way, ask to be directed to the Performance Room for the TC/PC meeting. For a map of more detailed directions and *info on Web SIG and Board meeting*, check the TC/PC website.

Directions to **Edina Executive Plaza** for **Systems on Saturday, Access, Word and Picture Perfect SIGs**: Take Highway 100 to the 50th Street/Vernon exit. [If you have come from the north, cross back over Highway 100 to the east side.] Take the first right and go past Perkins [The golf course will be on your left.] and continue on the east frontage road (Willson Road) to the next building—5200 . There is ample parking in the building's lot. Conference Room #102 is on 1st floor.

## Help yourself by helping others!

## Join the team & share your knowledge with others.

Contact TC/PC at [www.tpc.com](http://www.tpc.com)

Meetings start at 7:00 PM (9:00 AM on Saturday) unless otherwise noted. \*Meets at Edina Executive Plaza.

# December

# January

SUN	MON	TUES	WED	THU	FRI	SAT
					1	2
3	4	5	6	7	8	9 Linux on Saturday 9AM-11AM
10	11	12 General Mtg Computers in Manufacturing 7PM 6PM Tech Topics	13	14	15	16 MS Office and Access 9AM-Noon
17	18	19	20	21	22	23
24	25 	26	27	28	29	30
31	1	2	3	4	5	6
7	8	9 General Mtg Show Us Your Gadget 7PM 6PM Tech Topics	10	11	12	9 Linux on Saturday 9AM-11AM
14	15	16	17	18	19	20 MS Office and Access 9AM-Noon
21	22	23	24	25	26	27
28	29	30	31			

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# How to Retrieve Individual Files from a Windows Backup

By David Kretchmar, Computer Hardware Technician, Sun City Summerlin Computer Club, NV, August 2017 issue, Gigabyte Gazette, <http://www.scscclb.club>

In Windows 10, Microsoft has included the old Backup and Restore feature from Windows 7. This was weakened in Windows 8 and completely removed in Windows 8.1, but it is back in Windows 10, even if it is a bit depreciated

It's now called "Backup and Restore (Windows7)". Microsoft's File History is a great tool designed to back up your individual files, and Microsoft seems to be pushing users to utilize this feature, rather than relying on entire system backups. To this end, Microsoft states that you cannot restore individual files from a system image.

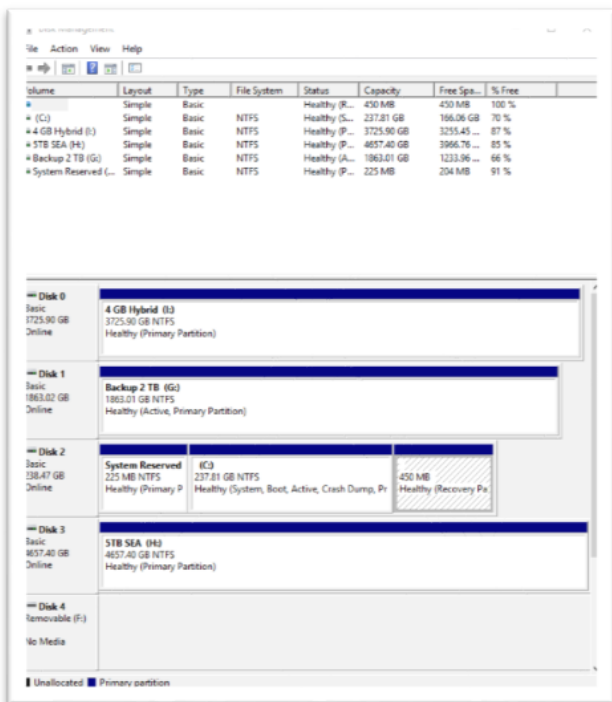
Microsoft is being untruthful when it states that you cannot restore individual files from a system image. This might represent a twist on the old joke that when you get information from Microsoft it is completely accurate, but useless. I'm not sure it is an improvement for Microsoft to provide inaccurate information to push users to utilize File History. Using File History to back up your data fits more neatly into Microsoft's long-term strategy of moving users to The Cloud, and maybe that's how they justify this mendacity

## Create an image then use Disk Manager

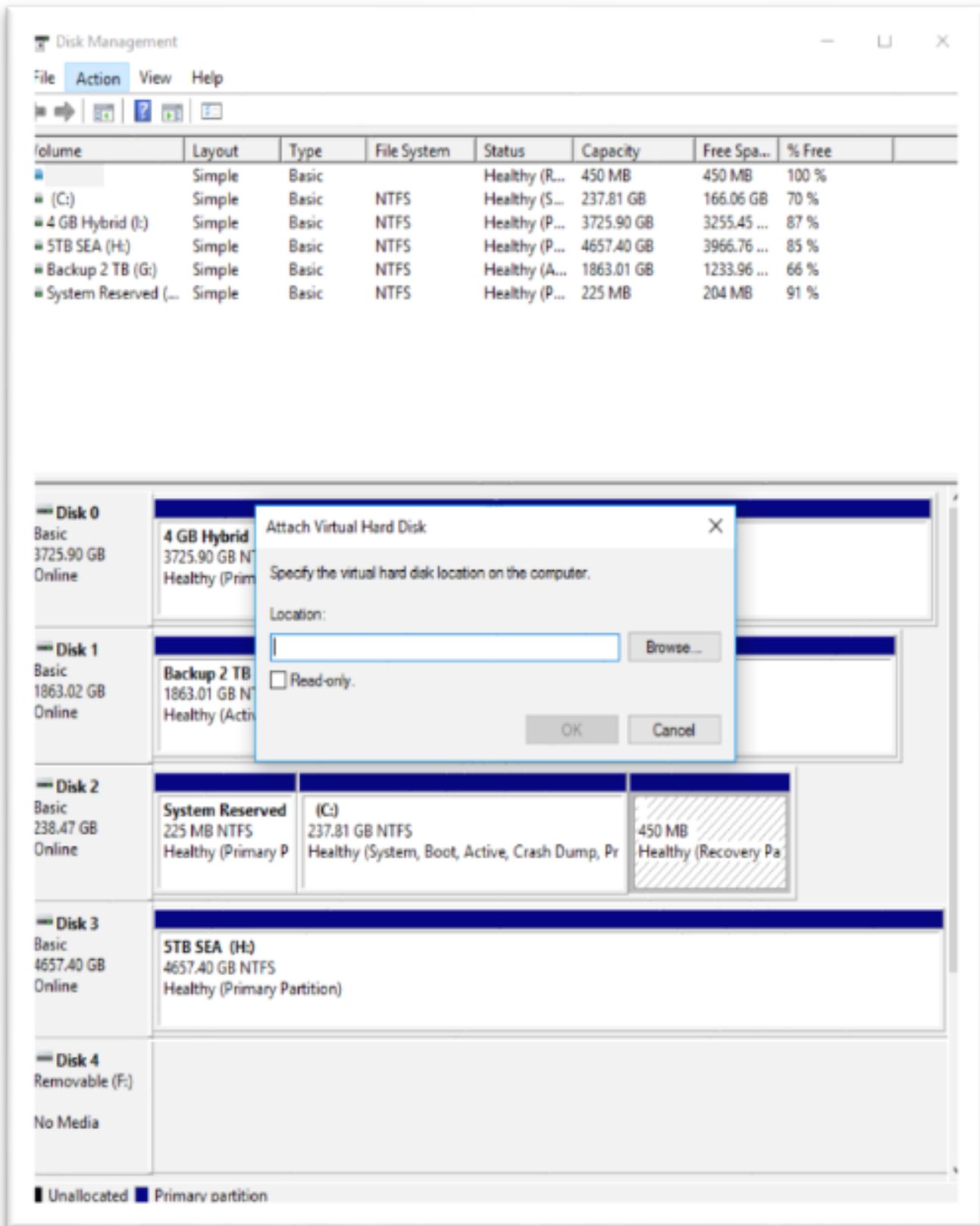
Obviously, you must create a Windows system backup before you can pull individual files from the backup image. This can be accomplished in different ways; one way is to go into the Control Panel (Category View), System Security, then Backup and Restore (Windows 7).

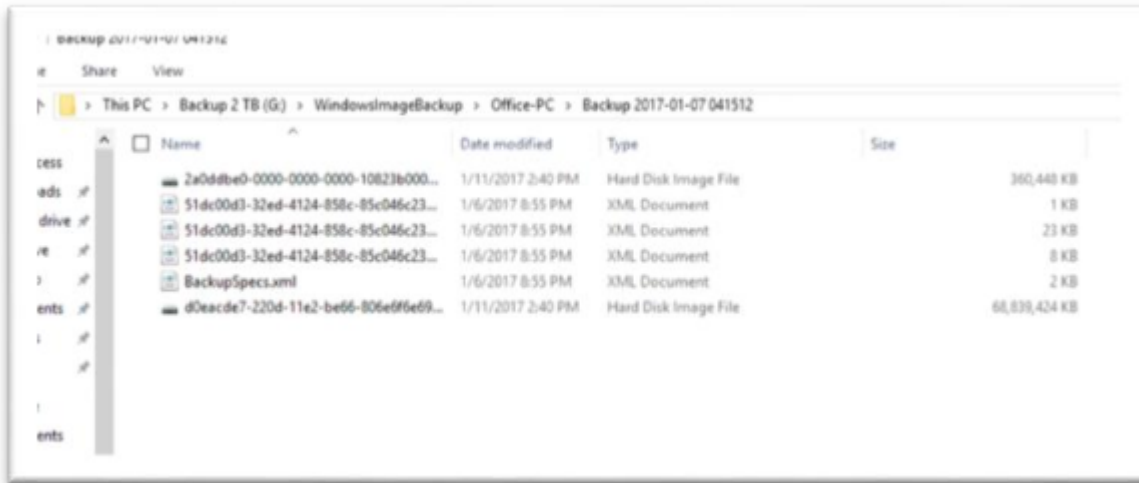
Once you have created the image, execute Disk Management by right clicking on the Start window and left clicking on Disk Management.

Click on Action then select "Attach VHD" (Virtual Hard Drive). Note this window Shows physical hard drives (Disk 0, Disk 1, etc.) as well as logical drives (C:, D:, etc.).



Now browse to the location of your image. Your image is contained in a folder named WindowsImageBackup. Drill down to your image file. There is more than one file in a folder named "Backup (date of backup)." The one ginormous file is the one we want to attach.





Go back to the Disk Management window and you will see a new hard drive (the virtual drive you just created). Note it is the same size as the C: drive that was imaged. Right click on the representation of this drive and proceed to add a logical drive letter to this drive, if one is not already assigned.

#### Copy your files

Now use File Explorer to access any of your files in the virtual drive you have just created. It's that simple! You can copy and paste any files you like from the image to any other location you can access. This is not as simple as a restore from File Backup, but it works.

Remember, you have created a virtual drive, also known as a logical drive, every bit as "real" as your own C: drive, lacking only the graphical user interface. You can even execute programs on your virtual drive, if you can locate its executable or application file.

#### Clean up

When you are done gleaming the data you want from the virtual drive, Rightclick on its representation in the Disk Management window, and delete the partition(s). Do not delete the image file on your backup drive or it will be gone forever.

Just reboot and your system will be back minus the virtualization. 

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**You have just read an issue of The Digital Viking.**

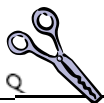
*Would you like to receive this delivered directly to your email or business each month?*

As a member of TC/PC, the Twin Cities Personal Computer Group, one of the benefits is reading this monthly publication at [www.tpc.com](http://www.tpc.com).

As a member of TC/PC, you may attend any or all of the monthly Special Interest Group (SIG) meetings and be eligible for software drawings. The small membership fee also includes access to real-live people with answers via our helplines, discounts, and various other perks.

Does membership in this group sound like a good way to increase your computer knowledge?

It's easy to do! Simply fill in the form below and mail it to the address shown.  
(If you use the form in this issue, you will receive an extra month for joining now.)



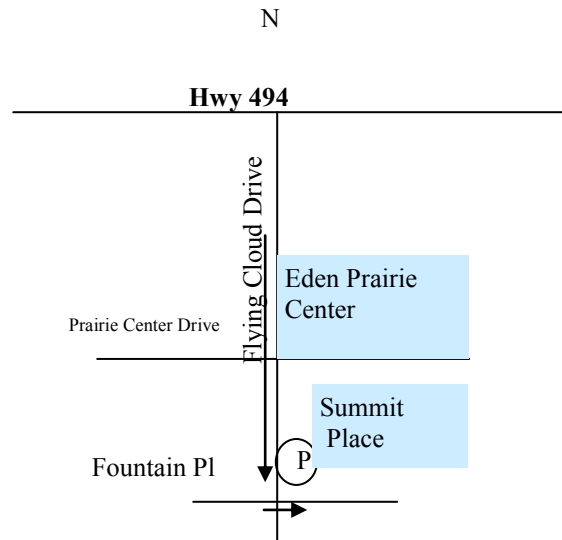
<b>Here's the info for my TC/PC Membership:</b>	<b>I'm signing up for:</b>	<b>12/17</b>
Full name _____	<input type="radio"/> Individual/Family Membership (\$18)	
Company name _____	<input type="radio"/> Business Membership (\$100)	
Address _____	If an existing member your # _____	
City _____ State _____ Zip _____	<b>Make checks payable to:</b>	
<input type="radio"/> Home <input type="radio"/> Business <input type="radio"/> Change address: <input type="radio"/> Perm. <input type="radio"/> Temp. 'til _____	<b>Twin Cities PC User Group 341 County Rd C2 W Roseville, MN 55113</b>	
Home phone _____ Work phone _____	<u><a href="http://www.tpc.com">http://www.tpc.com</a></u>	
Online address(es) _____	<input type="radio"/> Check # _____ <input type="radio"/> Bill me <input type="radio"/> New member <input type="radio"/> Renewal <input type="radio"/> Prior member	
Where did you hear about TC/PC? _____	I'm interested in:	
<input type="radio"/> I DO NOT want any of my information disclosed.	<input type="radio"/> Training classes <input type="radio"/> Volunteering <input type="radio"/> Special Interest Groups: New User, Access, etc.	
<input type="radio"/> I DO NOT want to receive any mailings	List here:	
<b>Administrative Use Only</b> Rec'd _____ Chk# _____		

**December 12, 2017**  
**General Meeting 7:00 PM**

## **Computers in Manufacturing**

**Presenter: Bill Ryder**  
**Summit Place**  
**8505 Flying Cloud Dr.**  
**Eden Prairie, MN 55344**

**More info and map: [www.tpc.com](http://www.tpc.com)**



341 County Rd C2 W  
Roseville, MN 55113

***FIRST CLASS MAIL***