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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

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General Meeting Tuesday, October 13, 2015 7:00 PM

Downloading and Running Windows 10 Technical Preview using VMWare Player

**Summit Place
8505 Flying Cloud Drive
Eden Prairie, MN 55344**

Francis Chao, a frequent presenter at APCUG's Virtual Tech Conferences, will be giving a live webinar via Skype at our October meeting. He will be demonstrating how to download and install a trial version of Windows 10 within a Virtual Machine using VMWare Player. Francis prides himself on covering each step in the process so that the audience knows exactly how to repeat the process on their own computers. He is also able to draw from his extensive experience to include hints on how to avoid pitfalls during the process. After the presentation he will be available to take questions and answers from the audience. Come prepared to learn from an expert! 

October Tech Topics SIG 6:00PM with Jack Ungerleider 

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Application form inside back cover

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The Digital Viking

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Contact Sharon Walbran at: SQWalbran@yahoo.com

Deadline for ad placement is the 1st 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

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Visit www.tcp.com for meeting details.

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Upcoming Meetings:

Tuesday, December 8th—Introduction to Windows 10 at the Microsoft Store at the Mall of America.. 

The Frugal Computer Builds a New Computer

Curtiss Trout, Vice President and Webmaster, Twin Cities PC Users' Group, Inc.

I built a new office computer for my own use at the end of last year. Why did I build it? Because I wanted a machine to meet my specific requirements and desires, like TWO multifunction DVD burners. Also, I wanted complete control over component selection. It's hard to say whether I saved any money going this route but I did get a machine that meets my current needs and is easily upgradeable in the future. E.g., it now has two empty memory sockets, it has an empty 5 ¼" external drive bay, there's room to add a large video card, and the power supply has capacity for just about anything I could throw at it. But, this article isn't about that machine.



Recently my wife asked me to recommend a replacement machine for her employer. The old machine was a very old IBM (Is that redundant? IBM's been out of the PC business about a decade.) small format desktop running Windows XP. Until recently the internet connection was dial-up; now it's cable. The budget was reasonable (\$700-\$1000). It would be nice to replace the aged CRT monitor. The office environment almost demanded that the new machine live on the desktop.

We considered a laptop. We could easily buy a machine that would meet the processing requirements and have a reasonably good display "off the shelf" (if we went to the right shelf, e.g., Micro Center or an internet vendor). Offerings at local big box stores didn't seem to fit our needs. Ultimately, we decided that a desktop machine was appropriate.

I considered local big box vendors, including Micro Center. I found this market dominated by machines from two companies that I'm not particularly fond of: HP and Dell. HP has mistreated me and I've sworn to never purchase or recommend any of their products. My experience with Dell is more limited but the horror stories I've heard make me very reluctant to recommend their products.

My previous desktop along with my wife's current desktop and another that I recommended several years ago are all refurbished Asus desktops (read towers). We're happy with all of them. Micro Center sells Asus desktops and it wasn't too difficult to pick a candidate machine. Further investigation revealed some details that I didn't particularly like. Time for the big decision: Buy, or build? We decided to build if we could come up with a good configuration within our budget.

Pcpartpicker.com is a site that I've found useful for configuring new computer builds. Many builders post details of machines they've built there and the site has a useful configuration building, checking and costing facility. E.g., it automatically asks and answers questions like "Will this motherboard fit in my chosen case?" or "Is this power supply adequate for all the devices in my configuration?" I did a little surfing here and found the description for a machine using a Cooler Master Elite 130 case and an ASRock H97M-ITX/AC motherboard. I was on my way...

The Parts List

Here's the parts list I developed with some reasons why I made these choices:

1. Cooler Master Elite 130 case (pictured above):
 - It's relatively compact so it will fit well in the available desk space.
 - It's well ventilated.
 - It has an external 5 ¼" drive bay (more about that later).
 - It has two front panel USB 3.0 ports and one front USB 2.0 port—very nice!
 - It is reasonably priced, about \$45.

Usually we'd pick the case after we decided what had to be installed. For this machine, the physical form factor requirements, i.e., small desktop, was a primary consideration.

2. ASRock H97M-ITX/ac motherboard. This board gave us anything we wanted/needed in a compact (mini-ITX) form factor, especially:

- Support for Socket 1150 processors. This is the most popular Intel package for mainstream processors right now. This includes the Intel® Core® i3/i5/i7 family.
- Onboard video supporting up to three high definition monitors (processor dependent). Includes VGA (becoming rare)

on new equipment, but there are many existing VGA monitors out there), HDMI and DVI-D connections. Ultimately, we'd use the HDMI port since only one cable would be necessary for both video and audio.

- Onboard 802.11 a/b/g/n/ac Wi-Fi. Wi-Fi was a major consideration since it wasn't practical to run an Ethernet cable to this machine.
 - Lots of USB 3.0 (4 back, 2 front) and USB 2.0 (2 back, 2 front) ports
 - Support for five SATA3 drives. More than we need and with no limited SATA2 ports.
 - Support for up to 16 GB RAM; but only two sockets
 - Very reasonably priced at about \$75, after a rebate
3. Intel Core i3-4170 3.7 GHz dual-core processor:
 - Good performance for the work at hand
 - On-board graphics
 - Price "sweet spot" of \$100
 4. Corsair CX 430M power supply
 - More than enough power (it's hard to find good power supplies with less capacity)
 - Semi-modular design; very important for this small case where we don't have room for unused cables
 - Reasonable price, about \$50
 5. EVGA 8 GB RAM kit
 - 2-4 GB sticks; better performance than one 8GB stick
 - Good performance
 - Good price, about \$45
 6. Western Digital Performance Black 1 TB hard drive
 - More space than this machine will ever need
 - I use only WD Black series hard drives because of their 5-year warranty.
 - On sale for \$65
 - Cost considerations prevented using a solid-state drive (SSD)
 7. ASUS DRW-24B1ST Internal DVD burner
 - I've used these in other computers and never had a problem
 - Reasonable cost, about \$20
 - Many machines are now built without an internal optical drive. This office demands that one be included for the work they do. This is the reason we needed a case with an external 5 ¼" drive bay.
 8. Logitech MK345 Wireless Keyboard/Mouse
 - Old keyboard and mouse due to be replaced
 - Going wireless eliminates some desktop clutter
 - Only uses 1 USB (2.0) port
 - On sale at Sam's Club for about \$20
 9. Windows 8.1 64-bit OEM
 - We would have gone with Windows 10 to avoid a future upgrade but the existing Brother Multi-Function Printer is not yet supported by Windows 10; the necessary drivers are expected to be released in December 2015.
 - We'll do a free upgrade to Windows 10 when the printer drivers become available.
 - About \$100; actually \$20 less than Windows 10

The Build

Once you've cleared off a suitable work area, the build is fairly straightforward. There are many videos on the 'net showing the process. There is some arbitrariness in the order below but this sequence will work:

1. Prepare the case (the left side is the "working side" of the case, just like most tower cases)
 - Install the I/O Shield. This comes with the motherboard and simply needs to be inserted in the back of the case. Make sure it's oriented properly.
 - Cooler Master uses far too many (even one is too many!) wire cable ties to tie down and bundle the front panel device and fan power supply cables. Remove them all! Use plastic cable ties as required during the build.
 - Route the front panel wires down to the lower front corners of the case.

- Bring the front fan power cable to the top right corner of the front of the case.
 - Install the four motherboard standoffs. This is easy as there are no choices where they go. I seriously wonder why Cooler Master didn't just install them at the factory.
 - If you're going to have an optical drive, remove the front panel and remove the slot cover from the front panel.
2. Install your drive(s):
- There is only one place to put an optical drive. The case has a tool free system for the optical drive. For this build I simply used it. I saw no need to add additional screws on the right side.
 - If you are not installing an optical drive then I recommend installing your drive(s) in/on the optical drive cage.
 - If you are installing an optical drive, I recommend putting your mechanical hard drive on the left side panel. This allows you to power both drives with a single SATA power cable, suitably routed. We don't want more cables than are absolutely necessary due to space constraints.
3. Prepare the motherboard components:
- I like to work with the motherboard on top of the anti-static bag that it came in. ASRock packs a thin, anti-static pad on the bottom of the motherboard inside the bag. Leave that pad in place until you're ready to install the motherboard in the case.
- If you are using the motherboard I've specified, install the Wi-Fi/Bluetooth module on the motherboard following the vendor's instructions.

Hint: Install the antenna wires after loosely attaching the mounting bracket to the module and before installing the module on the motherboard. Just treat the wires and sockets gently. You'll thank me later.
 - Install the processor into its socket. If you do it right there is absolutely no force required other than that required to operate the hold down mechanism. There are many videos on YouTube showing this process. Here's one from Intel: https://www.youtube.com/watch?v=q_EMqmJRFW4
 - The heatsink and fan that come with the processor are perfectly adequate. Use them!

The m/b has a header for the processor heat sink fan. Find it and determine how you want to run the fan power wire. You'll have to uncoil some of the fan's wire. I like to uncoil just enough to comfortably reach the connector leaving the excess generally like it was shipped. Make sure the wire will always be free from interfering with the fan.

There are four orientations for installing the heatsink. Chose the one that results in the neatest wire routing. Install the heatsink by pressing the hold-downs in an X-pattern, e.g., lower right, upper left, upper right, lower left. You're supposed to hear them snap into position—I've never heard, or felt, that happen. You can confirm they're installed by carefully looking on the bottom of the motherboard.
 - Install the memory:
 - ◊Don't touch the contacts; handle the memory sticks by their heat spreaders.
 - ◊If you're going to use both slots, use the same type of memory in both slots for best performance. If you're only using one stick you can use either slot.
 - ◊If you have a motherboard with 4 memory slots (unlikely on a Mini ITX motherboard) see the manual for which slots to use for your particular configuration.
4. Install the motherboard in the case. This is pretty straightforward. Check that all rear panel jacks align with the I/O shield cutouts. Make sure all fan and front panel wires are out of the way. There are only four screws, only one of which is a little hard to reach. They must be firmly tightened, but not too tight.
5. Route and connect case cables to and from the motherboard:
- Install the two antenna cable sockets in the I/O shield. I ran into a problem adequately tightening the retaining nuts because the nuts bottomed on the threads before the sockets were firmly attached. I solved this problem by adding a 1/4" lock washer on the inside of the I/O shield.
 - This motherboard only has one chassis fan header (larger/other motherboards may have more). The speed of the fan connected to this header can be controlled by the motherboard in response to the CPU temperature. I elected to connect the small, case side fan to this connector.
 - I elected to power the front case fan directly from the power supply and have it run at full speed all the time. Run the front fan's cable to the upper right corner of the front of the case. We'll connect a cable from the power supply later.
 - There is a plethora of other cables coming from the front panel components. Run each side's cables straight down to the case bottom and secure them with a cable tie. Run the left side cables (switches, LEDs and USB 2.0 port) to the right side and secure them along with the left side cables.
 - The cables for the front USB ports and audio ports have multi-pin connectors that only install one way. Connect them and neatly route the wires along the left case edge.
 - The connections for the switches and LEDs connect one or two wires at a time. Carefully connect them to the correct

motherboard header pins and route the wire along the case edge with the other wires.

6. Install the drive cables:

- Install the power cable to the drive(s). Your SATA power cable will have two drive connectors, one at the end and one in the middle. Use the middle connector if you only have one drive so you can tie the excess back on itself to minimize cable clutter. You'll have to figure out which connector to use with each drive if you have multiple drives. I used the middle connector for the hard drive (mounted on the side of the case) and the end connector for the optical drive. Any drive may be connected to any connector; just do whatever makes for the neatest cable routing.
- Install the data cables from the motherboard to the drives. I like to put the primary hard drive on the first port and the optical drive on the last port. With this motherboard it really doesn't make any difference.

7. Install the video card if you aren't going to use the motherboard/processor supported video. It's hard to imagine a situation where a more powerful video processor would be advantageous, especially for office work.

8. Install the power cable for the front fan. The power supply comes with a utility power cable that has four Molex-style connectors and an old-style floppy drive connector. This cable folds upon itself in an accordion fashion. Stuff the cable in the channel next to the right side of the optical bay so that one of the Molex connectors is attached to the front fan cable at the front of the case and the power supply connector is toward the rear.

STATUS CHECK:

- Everything going on the motherboard is on the motherboard, e.g., processor, processor heatsink and fan, memory, wireless module.
- Everything, except the power supply, that is going in the case is in the case, e.g., drives and motherboard.
- The data cable(s) for the drive(s) is/are connected to both the motherboard and the drive(s).
- The power cable for the side fan is connected to the motherboard chassis fan header.
- The antenna wires are connected to both the wireless module and the I/O shield.
- The power cable for the drive(s) is only connected to the drive(s).
- The power cable for the front case fan is only connected to the fan cable.
- All the front panel component cables are connected.
- All cables are neatly routed and secured with cable ties.

9. Prepare and install the power supply:

The power supply can be installed in two orientations, drawing air from above (outside the case) or drawing air from below (inside the case). Regardless, the power supply fan will discharge air from the rear of the case. There is no right/wrong way for a low power system like this. If we had greater cooling needs then the right way would be to draw air in from outside the case and add at least an additional fan to exhaust air from the center of the case.

While either orientation would work for this system, I elected to install the power supply with the fan drawing air from inside the case because the user is very likely to put objects, e.g., papers, on top of the case which would block airflow. I don't want that to affect the system cooling.

- Remove the power supply bracket from the rear of the case. Note the "TOP" label on one corner.
- Mount the power supply bracket to the power supply so that the fan is oriented as you have chosen.
- Place the power supply partially into the case and attach the 24-pin motherboard power cable to the motherboard.
- Attach the 4/8-pin processor power cord to the motherboard. This motherboard only uses 4 pins.
- Slide the power supply farther into the case and attach the utility power cable and the SATA power cable to the power supply.
- Slide the power supply fully into the case making the excess cable as neat as possible. You'll have a little channel between the front side of the power supply and the back of the optical drive bay where the wires can be tied so that they don't impair any airflow from the front of the case going over the motherboard.
- Use cable ties to keep the power supply cables in place. I tied the cables to the case cross bar. It isn't as nice looking as I would like, but it will do and nobody is likely to be looking here anyway.

10. Initial tests:

- Connect a monitor, keyboard, mouse, and power cables. Connect a network cable if you can.
- Turn the monitor on and, if appropriate, select the input type, e.g., VGA, HDMI, or DVI-D.
- Turn on the power supply and press the power switch.

You're likely to see something splash on the monitor and then see a message indicating that no operating system was found. That's OK. Press the reset switch and F2 key to get into the UEFI BIOS (computer configuration/setup screens).

Verify that the computer is seeing your processor (it should display the processor type, speed, etc.), memory (each stick's information like size and speed), and drive(s). Resolve any problems.

Post Build

Other than installing the case cover, and front panel if we removed it, we're through with the mechanics of building this computer.

It is possible (likely?) that the motherboard manufacturer has released upgrades for the system UEFI (that's the Unified Extensible Firmware Interface; for all intents and purposes what we used to call the BIOS). The ASRock UEFI includes facilities to check and update the UEFI via the Internet without need for an operating system as long as we have a wired network connection. My Asus system allows updating the UEFI via a USB stick, also without need for an operating system. I recommend updating the UEFI to the latest recommended version before installing the operating system.

It's now time to install your operating system. Depending upon your installation media and whether you have an optical drive in the system you can boot your system from either a DVD or USB drive to install the OS.

I installed Windows 8.1 from the DVD. The installation is straightforward and I'll only make a couple of comments based upon my experience:

- You can install and activate Windows 8.1 without having a Microsoft account, or, of course, with a Microsoft account. We elected not to use a Microsoft account, i.e., use a local account, because of the way this computer is going to be used.

I use a Microsoft account on my own Windows 8.1 system because it simplifies using Microsoft services like Office 365.

- You should install all available Windows updates except, depending upon your needs and wishes, Windows 10.
- The user interface for Windows 8 changed significantly from what we've grown to know (and love?) in Windows 7. This change is almost certainly the reason for most of the bad user experiences with Windows 8. I **STRONGLY** recommend installing Classic Shell to provide a familiar interface.


You have your choice of interfaces with Classic Shell installed. It's easy to use the one most desirable for your applications and wishes.

Classic Shell now supports Windows 10, but I have no experience with it.

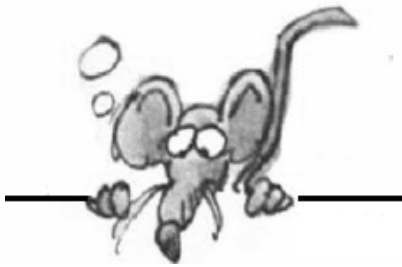
Final Comments

The components, including Windows, for this system cost about \$520, before tax. That's only slightly more than one of the off the shelf computers we considered. Our system has higher quality parts, and a smaller case.

We could have used the existing 15" CRT monitor. Instead, we elected to purchase a 24" LED display (ASUS VE247H) that was on sale for about \$130. This high-resolution monitor gives the users much more usable real estate and a higher quality image. General-purpose 24" monitors have been priced, like many of the components in this system, at a "sweet spot," considerably less expensive than the next larger monitors (27") and only slightly more than smaller monitors.

As I write this, this computer has been in use for about five weeks. In addition to enjoying vastly improved performance, its users appreciate its virtually silent operation. They are very happy! 

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NIBBLERS

By Jeannine Sloan

The Price For A Free Internet

Till an alternative model or business strategy to finance or sustain the “free” Internet is found, online advertising is here to stay. Websites will advertise, ad blockers will block, websites may block ad blocker users, users will then use the anti-ad-blocker add-ons now available, online advertisers will pay ad blockers to get their ads white listed, and so on. Read the article here: <http://www.thewindowsclub.com/online-ad-blockers-website-owners>

DuoLingo

The website and companion mobile apps remain the best free language-learning program you can find... The content is so good, that Duolingo ranks among the best software for learning a language, even when measured against paid programs. <https://www.duolingo.com/> (Ed. Note: reported to be set up like a fun game.)

New Snip Screen Capture Tool From Microsoft

The Snip beta, available for download here, is a new addition to the Office productivity family that enables users to take a snapshot of either a single active window, or your PC’s entire screen with the click of a button. From there, clips can be shared, stored locally, or copied to the clipboard in a separate window. Read more: <http://www.digitaltrends.com/computing/microsoft-snip-beta/#ixzz3k7Pplqib>

Download link: <https://mix.office.com/en-us/snip?previewvrg>

List Of Windows 10 Desktop Shortcut Keys

Microsoft’s Windows 10 operating system supports most of the shortcuts of previous versions of Windows. In addition to that, new shortcuts were added to Windows 10 that power new features such as Cortana or virtual desktops.

http://www.ghacks.net/2015/08/25/list-of-windows-10-desktopshortcut-keys/?_m=3n%2e003a%2e246%2eiu0ao03sdh%2e92h

Polite Self-Driving Car and Cyclist Faceoff

A little stand-off at an intersection in Austin shows how easy it will be to confuse autonomous vehicles.

<http://www.fastcoexist.com/3050556/>

(Editor’s note: No video, darn)

Driver

A **driver** is **software** that allows your computer to communicate with hardware or devices. Without **drivers**, the hardware you connect to your computer— for example, a video card or a printer—won’t work properly.

Shortcuts for Windows Explorer/File Manager

Nothing is more easy and geeky than nifty little keyboard shortcuts. Here are some relevant key

combinations to navigate through the Windows Explorer folder structure:

- [Windows] + [E] = launch Windows Explorer
- [ALT] + [RIGHT] = go forward
- [ALT] + [LEFT] = go back
- [ENTER] = open selected folder
- [ALT] + [UP] = move to parent directory
- [ALT] + [TAB] or [F6] = move between focus areas
- [ALT] + [D] = focus on address bar and select current path
- [F4] = open address bar drop-down menu
- [F3] = focus on search bar and drop down search filter options
- [ALT] + [P] = open preview pane
- [ALT] + [ENTER] = view properties of selected file
- [F2] = change file name of selected file
- [F10] = jump to file menu
- [F11] = switch to full screen mode and back
- [CTRL] + mouse wheel = change icon size (works almost everywhere, useful in browser)

Google Ups The Router Ante With Onhub

Google has re-defined the router and you'll want to seriously consider investing in this new piece of technology. Interesting TechRepublic article found here:

<http://tinyurl.com/puctd3y>

Windows 10: The First Month

While there's been the occasional minor bug here and there, Brien's first month with Microsoft's new OS has been relatively pain-free.

<https://redmondmag.com/articles/2015/09/03/windows-10%C2%A0the-first-month.aspx>

5 Security Tips For Businesses And Everyone Else!

Brand new vulnerabilities and exploits hog the limelight of security news. Because you couldn't have patched ahead, they're known scarily as "zerodays." New technology is also upping the anti. This article from NakedSecurity has some good tips.

<http://tinyurl.com/qf25dyj>

Broadband Opportunity Council (BOC)

A new report from the White House and the Broadband Opportunity Council (BOC) states that broadband internet in the US is no longer an "optional amenity" but a core utility that is now "taking its place alongside water, sewer, and electricity as essential infrastructure for communities."

What is High-Speed Internet?

high-speed internet — now defined as 25Mbps — as of 2012.

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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

Board of Directors*

All members are welcome! Check 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.

First Saturday @ 9 AM-Noon

Note: No Meetings June-August

Jack Ungerleider 612/418-3494 c
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

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
steve@kuhlmeysystems.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
steve@kuhlmeysystems.com

Microsoft Word for PC & Mac

Any level user can be proficient and efficient in basics and advanced features of Word..

Combined with Systems on

Third Saturday 9:00 AM—Noon

Note: No Meetings June-August

Tom Ostertag 612/951-5520 w
651/488-9979 h

Curt Trout 651/484-4569 h
ctrout@troutreach.com

Systems on Saturday

For all levels of computer challenges and any type of computer-related question. Incl. Q&A

Meets 3rd Saturdays 9:00 AM-Noon

Note: No Meetings June-August

Curt Trout 651/484-4569 h
ctrout@troutreach.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

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

October

November

SUN	MON	TUES	WED	THU	FRI	SAT
				1	2	3 Linux and Open Source on Saturdays 9:00—Noon
4	5	6	7	8	9	10
11	12	13 Gen Mtg 7:00PM Downloading Win10 using VMWare 6PM Tech Topics SIG	14	15	16	17 Windows & MS Office (including Access) 9:00-Noon
18	19	20	21	22	23	24
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1	2	3	4	5	6	7 Linux and Open Source on Saturdays 9:00—Noon
8	9	10 Gen Mtg 7:00 PM TBA 6PM Tech Topics	11	12	13	14
15	16	17	18	19	20	21 Windows & MS Office (including Access) 9:00-Noon
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To SSD or Not to SSD? – That is the question.

By Phil Sorrentino, Member of The Computer Club, Florida, June 2015, <http://sccccomputerclub.org>, philsorr.wordpress.com, [philsorr \(at\) yahoo.com](mailto:philsorr@yahoo.com)

Whether 'tis Nobler in the mind to suffer the Slings and Arrows and stay with Hard Drives, Or to take arms against a sea of troubles and Convert to a Newer Technology (Solid State Drives). Well, maybe that's not quite what Shakespeare had in mind, but it does bring up the question. Should we begin to move to Solid State Drives in our computing devices? (Are we starting to see a replacement for the traditional mechanical Hard Drive?) Mechanical Hard Drives have been around since the beginning of Personal Computers. The IBM PC XT in 1983 included an internal 10MB (yes, that's Megabyte) hard disk drive. Anyone remember the name "Winchester Drive"? The term Winchester actually comes from an early type of disk drive developed by IBM that had 30MB of fixed storage and 30MB of removable storage, so the inventors labeled it a Winchester disk, after the Winchester 30/30 rifle, but I digress.

The question is shall we upgrade to SSDs? And I think the answer is "yes", where it makes sense. So, let's look at where it might make sense. Consider that our computing devices fall into the following categories; desktops, laptops, tablets, and smartphones. Right off the bat, tablets and smartphones only come with solid state memory, so there is no decision to be made there. So that leaves desktops and laptops for our consideration. Though the number of desktops and laptops are expected to drop over the next few years, many of us will have at least a laptop for the foreseeable future. (A forecast made by International Data Corporation, a provider of market intelligence for information technology markets, indicates that around 85% of the Worldwide Connected devices by 2017 will be Smartphones and Tablets. For the other 15%, Laptops will outnumber Desktops by about 2 to 1.)


So, let's look at why we might want to upgrade to an SSD in the first place. An SSD is a replacement for a traditional, mechanical disk drive. An SSD is a mass data storage device that uses solid-state memory to store non-volatile data for future access, in the same manner as a traditional hard disk drive. Traditional hard drives are electromechanical devices that employ spinning disks coated with magnetic material, and moveable read/write heads which "fly" over the disk at a height of less than 1 millionth of an inch. (A human hair is approximately 2,000 millionths of an inch.) In contrast, SSDs use microchips which retain data in non-volatile memory chips and contain no moving parts. SSDs allow for easy replacement because they are manufactured in the same physical form factor, and use the same electronic interface, as traditional hard drives. SSDs are typically more reliable, they are less susceptible to physical shock, and with no moving parts they are silent. But it is the fact that SSDs store and retrieve data faster than traditional hard drives that make them a desirable upgrade. On the down side, SSDs are more expensive and typically support a limited number of writes over the life of the device, which is probably only a consideration for a super power user.

So, let's consider the question of upgrading a laptop or a desktop. Two common reasons for upgrading either of these might be lower cost or some type of improved performance. Today, for larger SSDs, lower cost is not in the cards. In fact, currently, large SSDs (say 1TB) are about four to five times as expensive as the equivalent hard drive. A large 1TB traditional hard drive would currently be about \$75 and a 1TB SSD would be about \$400. However, for smaller drives (say 100GB) the cost difference is much less. A small SSD might cost only around \$50 but here a comparison is difficult because traditional hard drives only start at around 500GB. So on the low end, the SSD begins to be cost competitive. (Keep this in mind when we look at the desktop upgrade.)

So with cost not an advantage, then the reason would have to be improved performance, and in fact this is where the SSD really shines. A PC with an SSD will boot in tens of seconds, definitely less than a minute. The same PC with a hard drive will take much more time to boot and will be slower during typical use. So, the PC with an SSD will boot faster, launch applications faster and will generally exhibit faster overall performance. A minor side benefit with the SSD is that there is no need for de-fragmentation; because of the way the data is stored, the effects of fragmentation are negligible. (In fact you should never defragment an SSD because the defragment activity will lower the number of writes available.)

Now that we know that the main benefit of an SSD will be increased speed, and to a lesser degree increased reliability (remember no moving parts), what else should we consider. First, let's look at a laptop upgrade. Most laptops have space for only one drive, so we should probably put in a drive large enough for the laptop's intended uses. With only one drive, the Operating System and Applications and Data all have to

share that one drive. The OS and Applications could take 80 to 100 GB, so a 256 GB drive might be the smallest to consider. Currently, 256GB drives can be had for somewhere in the \$100 to \$150 range. For someone with large music, picture, and/or video collections, a drive closer to 1 TB may be in order. Currently, 1TB drives can be had for somewhere in the \$350 to \$550 range. It is always good to have more space, but with the price premium of SSDs it may pay to buy only what you think you will need. 512 GB may be enough for most users. Currently, 512 GB drives can be had for somewhere in the \$250 range. If this cost is no problem, then the laptop upgrade probably makes sense.

Finally let's consider a desktop upgrade. (I bet the audience for this upgrade is a whole lot smaller than for the laptop, but let us press on.) The nice thing about the desktop is that there is usually space for multiple drives. Two, three, or four spaces are not unusual. In this arrangement, the C: drive can be separated from the other drives. This allows the C: drive to be only as big as needed for the OS and Applications (data can go on the other drives). Maybe 120 GB is all that is needed, so this upgrade may be less than \$100. The other drives can still be traditional hard drives. With this mix of SSD and mechanical drives, the boot speed and the general operation will definitely be improved. (Although some data intensive operations where the mechanical drives are being used a lot may not show as much of a speed improvement.) This is a really inexpensive upgrade and it affords a lot of bang for the buck, so it, too, probably makes sense. 

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Phone Service without Paying

Tom Kuklinski, Director, Computer Users of Erie, June 2015 issue, Horizon – The Official Journal of the Computer Users of Erie, www.curie.com, [cuerie01 \(at\) roadrunner.com](mailto:cuerie01@roadrunner.com)

Phone service without a plan or contract? I like that but I still don't want to pay anything for it either. Okay, I am a cheapskate! There I said it.

So for years now, about 55 years, I have had a landline service. I did not even think that I could go on with life without it. Remember when you would pay \$1.00 per minute for a 'long distance' call? If you are under 30 years old then look it up on your internet.

One day my wife announced that she wanted a cell phone. This was sometimes in the late 1990's. I could not justify it but she did. I could live without one as long as I had my trusty landline. Well, the day came and she brought home a flip cell phone. They were so nice at the Verizon store that they gave her a 'free' phone and a monthly bill that was three times what I paid for the landline phone.

That flip phone could not do much more than being a nice phone with an address book in it. She was limited in talk minutes but when more were needed, Verizon was very friendly in selling her more.

As years went by, I dropped the land line and got one of those cell phones of the day. It also was a flip phone. Time progressed and so did technology. The iPhone 3G was introduced and upset everything.

Phones were no longer phones. These manufacturers put small computers in them and called them 'smart.' It was now at this point that I was hooked. However, it also became expensive to have one of these. Still, millions, no change that to billions of people around the world got one. I was one of them.

It only took a short while to realize these smart phones were expensive to own. Somehow when you looked at the smart phone in the phone store, it did not look that expensive. It only took a few months after owning one for me to 'smart-up' and realize the actual expense. I wanted more for less.

Let's fast forward to today. The phones are very smart. In addition, they are faster and bigger. They hold more information. It is now that the state of the art smart phones are approaching laptop functionality. Today there are more apps for the smart phones than there are programs for computers.

So let me repeat what I said earlier, I am a cheapskate!

Each and every month when the bill was due, I kept thinking -- there must be something else cheaper and better. I repeated that each month till today. I found the solution. Yes I could do cheaper and close to better. All this is made possible by the competition among the cell phone providers, the wealth of the consumer, competition by manufactures, apps and stinginess.

Okay, if you look around, you will see almost everybody you know with a cell phone. You know people that wait every two years to get the latest offerings by manufacturers. You see ads by AT&T, Verizon, T-Mobile, Sprint, Straight Talk, MetroPCS, and many more providers. You see ads and reviews on the news about the latest offerings by Apple and Samsung and other manufactures. Where do you fit in?

Are you one of those waiting for the latest offering no matter what it costs? Or are you one of those people that does not need the latest and gripe about how much you pay for a cell phone. Here is a solution for the second character that does not need the latest.

There are a lot of 'old smart phones' that are not being used because the owner upgraded to a later version. Basically the new one does what the old one does except the newer one may be larger and faster. Not much of a difference. They both make phone calls, text, email, surf the internet and have access to thousands of apps. What is the older phone doing now? It is probably collecting dust on a shelf somewhere. This is gold for a prospector like me.

The previous owner may not think the old phone is worth much. Many people are happy to sell the old phone for pennies on the dollar. If you are a good friend or related to that person then they may even give it away to you. If that happens to you I suggest that you take it.

Several providers will give away smart phones that are refurbished and may be one to two generations old. If you go to www.straighttalk.com you may shop for smart phones. Usually Straight Talk features a 'free' or \$9.99 smart phone, IF you buy a month's plan. The plan costs \$45.00 and features unlimited everything for 30 days. Not a bad deal. After that 30 days, you can do whatever you want to do with this smart phone. This is a NO CONTRACT phone. You are not bound to a contract. Make sure the smart phone is an Android phone.

If you shop around, you will see that other providers do similar deals. Currently Verizon offers a Motorola G for \$25.00 for use on their No contract - month to month plan. This phone retails for \$179.00 and is a very good choice. If you don't like Verizon then check out www.textnow.com for FreedomPop, Cricket and MetroPCS are other providers that have similar deals. Currently MertoPCS offers a very good phone for ZERO dollars after rebate and two months of service. It is the LG Leon LTE. It features a 4.5 inch screen and Quad core processor. (Deal ends June 30, 2015)

Use the phone for one or two months and the phone is free to you to use anyway you wish. Do you get the idea?

You also need to shop around for your best current deal. Go on line to www.dealnews.com as a resource.

So now you did get one of these phones and are out of any contract and now want to know what to do with it.

You go to the Google Play Store or Amazon App Store using your phone through a local Wi-Fi if you are Android. Do a search for Apps that will give you VOIP service. By the way, VOIP stands for Voice Over Internet Protocol. It makes an app turn your off-line phone act like an active cell phone. It does not use the cell towers or cell service of a phone company so you do not need to pay anyone. However, it will do the same as a cell phone by using the Internet. The Internet service is a key component in making this work. If you do not have internet then this will NOT work. You can use hot spots that are around and free.

On the Android phone, I like an App called GrooVe IP Lite. This app is free but does have ads in it. You may purchase the ad free version for \$4.99 if you wish. This App does not have Text function yet so you will need a Text App if you like to text. GrooVe IP will give you a phone number to use that is free. That is you new phone number. You may call free anywhere in the USA. If someone calls you and you do not have the phone running then the caller can leave a voice message to you. This voice message will then be sent to your email. So you never have to miss a call. This app has many options and is the best one that I found. Sorry but it is not available for iPhone.


When you look for VOIP programs you will have several to choose from. Try them out. They usually are free but not always so read the description carefully. Other apps include some of the brand products like Magic Jack or Freedom Pop. Usually Google Voice is available but I found it confusing to configure to my needs.

Here are some apps for the iPhone or Android: Skype - free between Skype users but on as a phone. If you pay you can get it just like a phone. Cost per year will run about \$40.00. This is available for Android also.

TEXTNOW CLASSIC - You get a free dedicated phone number, Texting, Picture Messaging, Calling and VoiceMail. You earn credits by watching Ads or you can buy them. It is cheap. This also works on Android. What is interesting about this App is that this company partnered with Sprint. If your phone is Sprint compatible then you can get very low cost service. It starts at \$18.99 per month and no contract. This is optional and not required.

Again, there are many more apps so I advise you to check it out and get the one you like. The idea is to get a phone number and use your out of service smart phone with VOIP service.

I hope that you get some understanding about what is happening here. The smart phone - cell phone industry is changing. It is competing as it should. There will be casualties. Fruit can be shaken from the tree. That is your gain to go after.

So now you have a fully (almost) functional smart phone. You DO NOT pay any fees to have it either. Now this is what I am talking about. I hope this article helps you.  [Go to Page 1](#)



You have just read an issue of The Digital Viking.

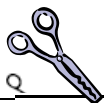
Would you like to receive this delivered directly to your email or business each month?

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.

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.)

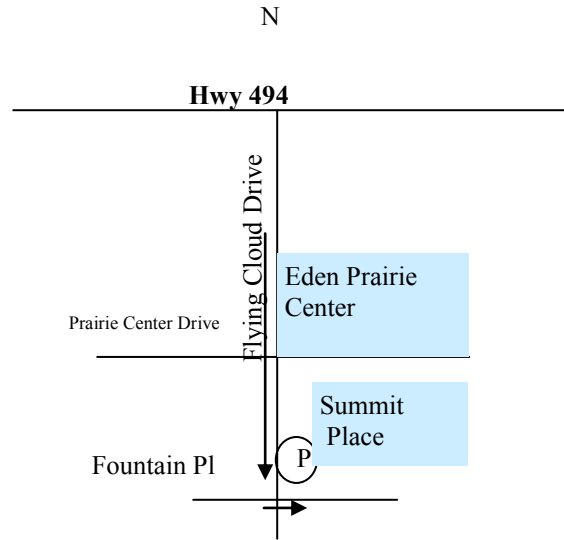


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October 13, 2015
General Meeting 7:00 PM

Downloading & Running
Windows 10
Using VMWare Player
Presenter: Francis Chao

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