



February 2014

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Ken Johnson, Newsletter Editor

CALENDAR

SIG = Special Interest Group

This Week's Schedule

February 15 - Saturday - 1:00-3:00 PM

[General Meeting](#) - Leader: Ray Carlson

Location: Prescott Public Library

First Hour: Innovation

Innovation is a key theme for technology companies. It has been suggested that the key idea behind technological innovation is to find better and cheaper ways to do necessary tasks. A few weeks ago, a major show in Las Vegas focused on innovation in Consumer Electronics. During the first hour of this meeting, we will look at the eight ideas that generated the most positive reactions from various reviews from that show. A lot of attention focused on what was called "wearable technology" including smart wrist watches, new smartphone apps, and wearable sensors to monitor various health issues.

Additional themes were improved controls for home devices, more sophisticated cars, and practical uses for Google glass. The discussion will address how useful as well as feasible these innovations are likely to be.

Second Hour: We will return to our normal focus on ways to deal with everyday computer problems as Phil Ball presents his Tips and Tricks. To insure an opportunity to discuss your questions, we will insure that the first hour ends on time.

If time permits, Phil Ball will add some of his always useful Tips and Tricks.

In addition to the presentations, the following are typical events which take place at our General meetings:

- 1) We hold an informal Flea Market in which you are encouraged to bring in your excess computer equipment or software and make them available for others to enjoy at no charge. Please deposit give-away items on the table in the back marked "Free Stuff." Any items left here at the end of the meeting are subject to disposal.
- 2) If you have items that are just too good to give away, you may set up a separate table and hold your own sale.
- 3) We conduct a raffle of new computer items at the end of the meeting, so make sure to get a pair of tickets from whoever is in charge and place one on the item you'd like to win.
- 4) We will also accept your used ink and toner cartridges for recycling. They are turned in to Think4Inc for credits which PCS uses to purchase office supplies from them.

Calendar *Cont on Pg 2*

March 1 - Saturday

There will be no PCS meeting today.



March 8 - Saturday - 1:00-3:00 PM

[Digital Photo SIG](#) - Leader: Phil Ball

Location: Prescott Public Library

Many aspects of digital photography will be discussed, including use of digital cameras and using Photo-shop Elements to make your photos look their best.



March 15 - Saturday - 1:00-3:00 PM

[General Meeting](#) - Leader: Ray Carlson

Location: Prescott Public Library

*Note that these dates are correct at time of publication but are subject to change.
Up to date information can be found on our website, www.pcs4me.com*

*Unless otherwise noted, our meetings are usually held in the
Founder's Suite at the Prescott Public Library.*



**Welcome to
NEW MEMBERS**

**Lloyd Evans- (returning)
Gene Steiner
Bob Kane-(returning)**

**Prescott Computer Society
Officers & Board of Directors
2012-2013**

Officers:

President Ray Carlson
Vice Pres Phil Ball
Secretary JB Burke
Treasurer Edi Taylor-Richards

General Directors:

Joan Baum Murray Smolens
John Carter
Joan Fullmore
Rich Knapfel



Home Networks

By Dick Maybach, Member, Brookdale Computer Users' Group, NJ

July 2013 issue, BUG Bytes

www.bcug.com

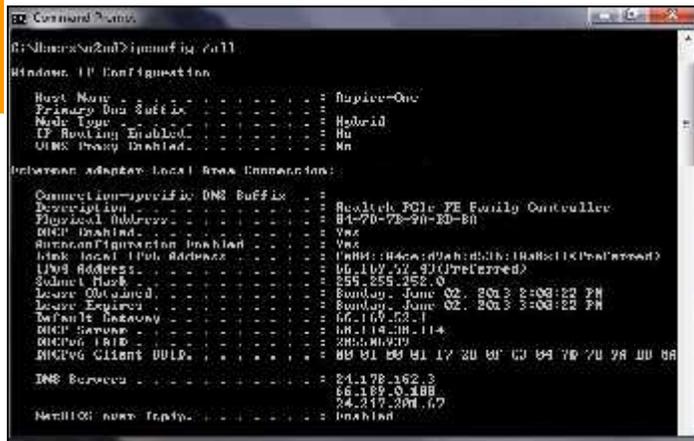
n2nd@charter.net

Learning about networks, especially the Internet, can easily become mind-numbing, largely because the field is so full of jargon and acronyms. While it isn't possible to escape this morass completely, we can make it somewhat more manageable by approaching the topic in two stages: (1) a single computer connected to the Internet and (2) a home network connected to the Internet.

Every device connected to the Internet, no matter its location in the world, has a unique Internet Protocol (IP) Address. This is usually written as four three-digit numbers separated by periods, where the value of each number varies from 0 to 255. Although we usually think of a site's address as being its Uniform Resource Locator (URL), this is just a convenient representation. When you send a message to a URL, your computer uses a Domain Name System (DNS), usually a service provided by your Internet Service Provider (ISP), to find the associated IP address. For example, *www.google.com* is assigned the IP address 74.125.140.105. You, of course, must have your own IP address so that you can receive data. (You can find it by browsing the site <http://whatismyipaddress.com/>.) Your ISP assigns an IP address to your computer when you connect it to the Internet using a Dynamic Host Configuration Protocol (DHCP) service. This means that your ISP must own enough IP addresses to supply a unique one to each user, and normally each home user has only one. If you have only one computer and you plug it directly into the ISP's modem, this is sufficient.

Before introducing any more complexity, let's see what we can learn about our Internet connection. Use an Ethernet cable to connect your PC directly to the Wide Area Network (WAN) modem provided by your ISP. You will have to reboot your PC and probably the WAN modem to establish an Internet connection. If you use Windows, navigate through *All Programs* and *Accessories* to *Command Prompt* and type "ipconfig /all". (The equiv-

alent Linux and OS-X command is "ifconfig" or "ip".) There are graphical programs that show the same information, but ipconfig puts it all on one screen. (The screenshot shows only the first portion of the command's output.)



Fortunately, not all of the displayed data is important, but note the following items:

- DHCP is enabled and its server is located at 68.114.38.114, and the ISP has used it to assign the IP address 66.169.52.43 to this particular PC.
- This address is valid for one hour (as shown by the Lease Obtained and Lease Expires times). Before the IP address lease expires, your PC will automatically request a renewal.
- The hard-wired address of the Ethernet interface in our PC is 04-7D-B-9A-BD-8A.

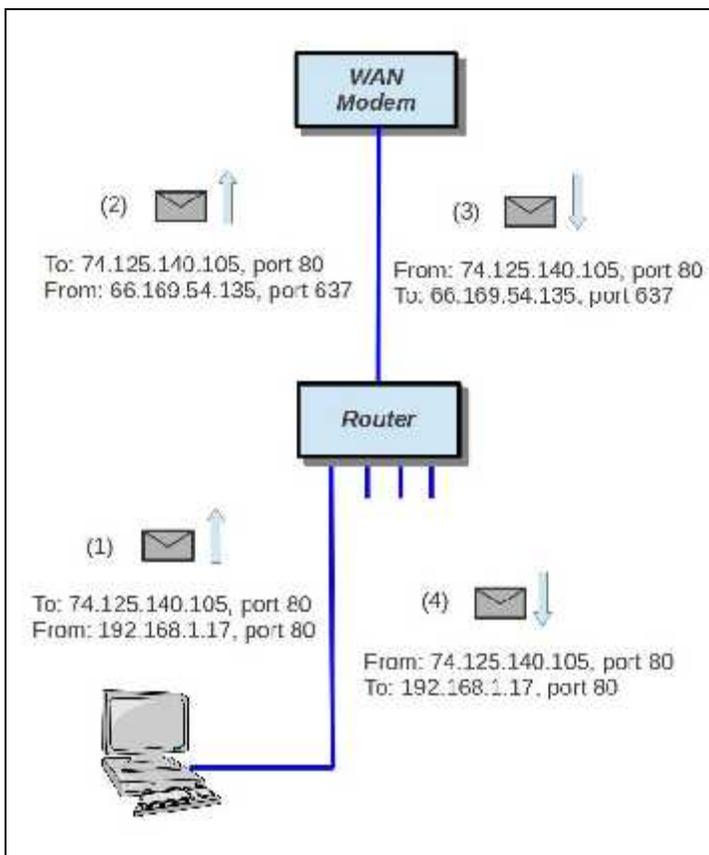
One of the DNS servers at 24.178.162.3, 66.189.0.67, or 24.217.201.67 translates URL to IP addresses.

If ever you lose your Internet access, a good first step would be to repeat the above procedure to see whether the problem is in your home network or within your ISP.

However, many of us want to connect several devices to the Internet. How can we do this with only one IP address? There are blocks of IP addresses which never appear on the Internet, but are reserved for local use. The devices on most home networks use the addresses 192.168.1.x, where where x varies from 0 to 255. (The 1 in the third group could be replaced with any number from 0 to 255.) If your network is using the 192.168.1.x plan, it knows that any IP address in this range belongs to a local device and any IP address outside this range resides on the Internet. To make use of this, we purchase a router and connect our local network devices to it. It has a separate connector for a cable to our ISP's modem. The router, as its name suggests, directs any local mes-

Continued from pg 3:

sages to internal addresses and sends all others to the ISP, but first it changes their return address to the IP address the ISP has assigned. But this means that all incoming messages have the same IP address; how does the router get them to the correct local device? Each message has not only an IP address, but also a 16-bit port number, and the router changes the port numbers of the return addresses of outgoing messages. It keeps track of these and when an incoming message appears, changes its address to the appropriate local device and restores the original port number. This process is called Network Address Translation (NAT).



In the figure, our PC generates a message (1) to Google at 74.125.140.105 using Port 80. (It probably consulted an NDS to obtain Google's IP address.) In this case, the ISP has assigned us the IP address 66.169.54.135, and the router changes the return address to this (2) and changes the port to 637. When Google replies (3) to the only address and port it knows, the router consults its records and sees (4) that messages from Google to port 637 should be routed to local IP address 192.168.1.17 and Port 80. Your neighbor may also be using 192.169.1.17 as the local IP address for one of her PCs, but since her Internet IP address is not 66.169.54.135, she won't get your messages from Google.

If your home network includes a router, you should now reconnect it to the WAN modem and restore the original network connection for your PC. Again, use `ipconfig /all` (or `ifconfig`, as appropriate) and compare the results with those you obtained with the PC connected directly to the WAN modem. Again, the screenshot shows only the first portion of `ipconfig`'s output:

```

Command Prompt
C:\Users\snz\cmd>ipconfig /all

Windows IP Configuration

Host Name . . . . . : 17 01864
Physical Disc suffix . . . . . : Hybrid
IP Routing Enabled. . . . . : No
DNS Proxy Enabled. . . . . : No

Ethernet adapter Local Area Connection:

   Connection-specific DNS Suffix . . . : link100_P111-1984_P11 Backup Adapter
   Physical Address. . . . . : BB-BB-27-B0-B2-38
   DHCP Enabled. . . . . : Yes
   Autoconfiguration Enabled . . . . . : Yes
   Link-local IPv6 Address . . . . . : FE80::A03:94DE:2936:21E3::11 (Preferred)
   IPv4 Address. . . . . : 192.168.1.175 (Preferred)
   Subnet Mask . . . . . : 255.255.255.0
   Lease Obtained. . . . . : Saturday, August 16, 2013 11:29:55 AM
   Lease Expires . . . . . : Sunday, August 17, 2013 11:27:55 AM
   Default Gateway . . . . . : 192.168.1.1
   DHCP Server . . . . . : 192.168.1.1
   DHCPv6 Server . . . . . : 255.255.255
   DNS Servers . . . . . : 192.168.1.1
   NetBIOS over Tcpip. . . . . : Enabled
  
```

Note the changes. (Ignore the change of Host Name and physical address; this is for a different PC.)

- The IP address now begins with 192.168.1, which is a local one, as is the default gateway.

The DHCP server is now our router, which assigns all the devices with IP addresses of the form 192.168.1.x.

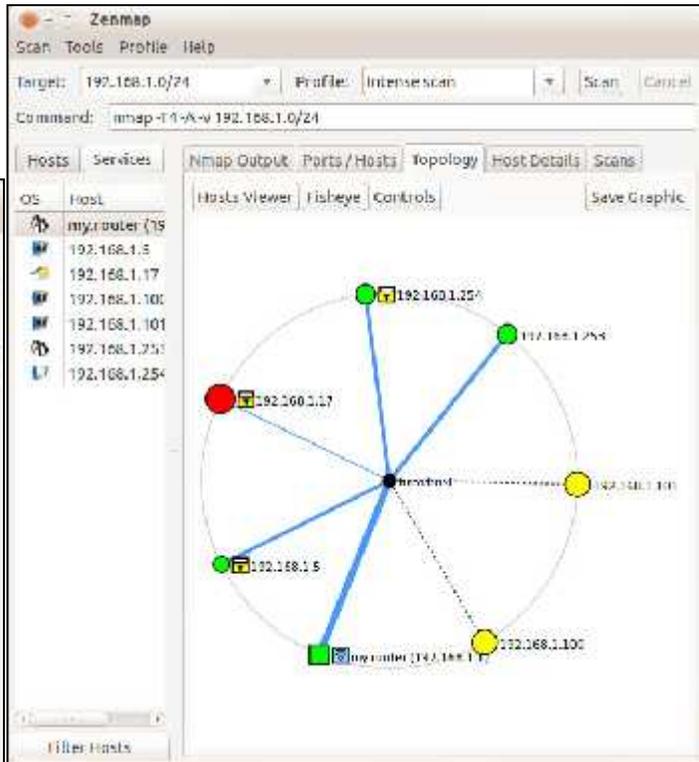
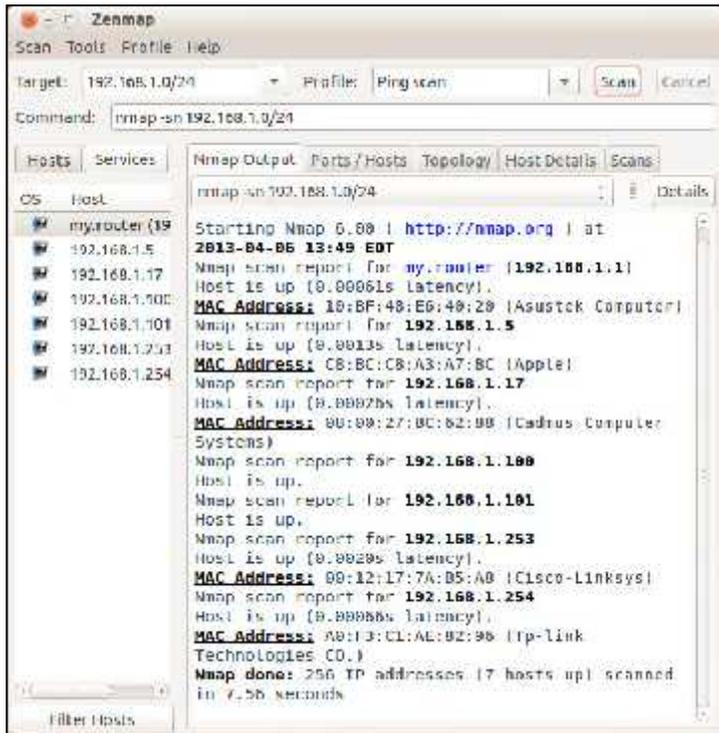
There are two DNS servers, one in the router for local devices and one at the ISP for the Internet. (Note that the latter is one of the three we saw when connected directly.)

Zenmap (<http://nmap.org/zenmap/>), available for Linux, OS X, and Windows, is a very valuable tool for exploring your local network. Pay special attention in the following discussion of how you can limit its probes to your local network, as its activities can look like you are trying to hack any computer it probes. Some system administrators are quite sensitive to these, and using them could result in unpleasant conversations with your ISP or legal authorities. The screenshot shows the results of a simple ping scan of my local network. Note that the target was 192.168.1.0/24. My network uses the addresses 192.168.1.x, where x varies from 0 to 255. Each field in the IP address is actually an 8-bit number, and the /24 tells Zenmap that it should not change the first three fields. (Three fields times 8 bits equals 24.) Thus it probes all the addresses from 192.168.1.0 through 192.168.1.255. If we had specified 192.168.0.0/16, Zen-

Continued on pg 5

Cont'd from page 4

Map would have probed 192.168.0.0 through 192.168.255.255, and while this wouldn't probe outside your local network, it could take a long time. The result is shown below:



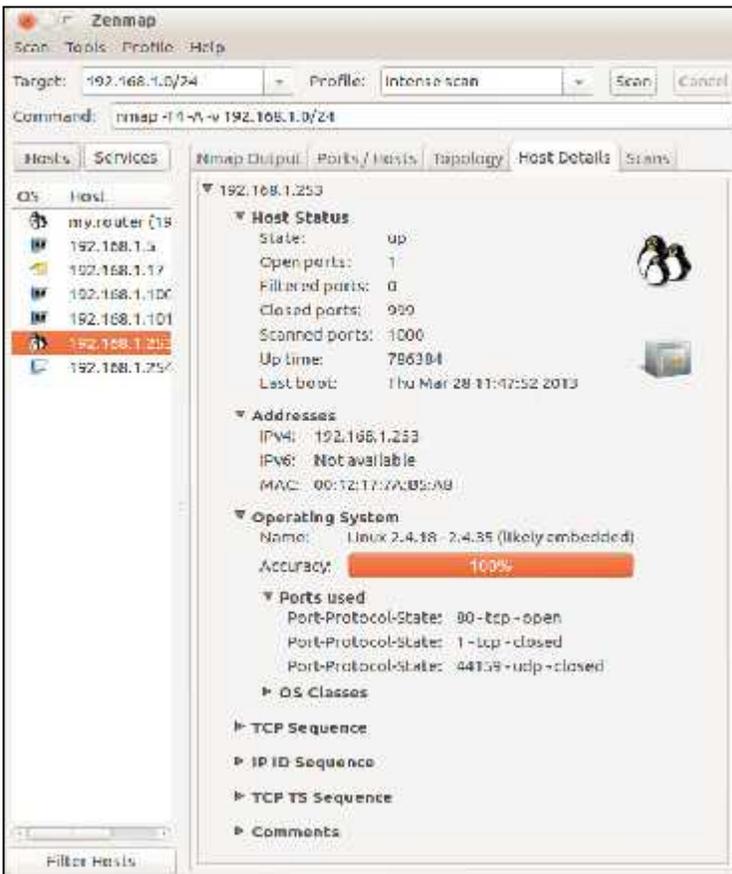
Circles indicate computers, and squares indicate routers. The colors and sizes of the nodes indicate how many ports are open; a greater number of open ports implies a greater vulnerability to outside hacking. (Green is good, yellow less so, and red could be something to be concerned about.) The thickness of the line to the local host indicates the round-trip delay; thick means slow. (I made this probe from the PC with addresses 100 and 101, so delays can't be measured here.) The square yellow icon is a padlock indicating that some of the ports are filtered, which lessens the vulnerability to hacking. Finally, the square blue icon indicates a wireless access point. (Clearly, the detection isn't perfect, because 253 is also a WAP.)

Seven devices are operating; since the first three fields of their IP addresses are the same, I'll designate them by only the last field. Our router is located at 5; 17 is a PC with an Asustek motherboard; 100 is the Ethernet adapter and 101 the wireless card of my desktop PC; 253 is a wireless access point; and 254 a network switch. A ping scan is quite simple; we are just looking for an answer from each address. We can learn much more by performing an intense scan, which takes several minutes, compared to the few seconds for a ping scan, and the results fill several screens. Fortunately, Zenmap can summarize its results graphically. (See figure in next column).

Need Help With Computers?

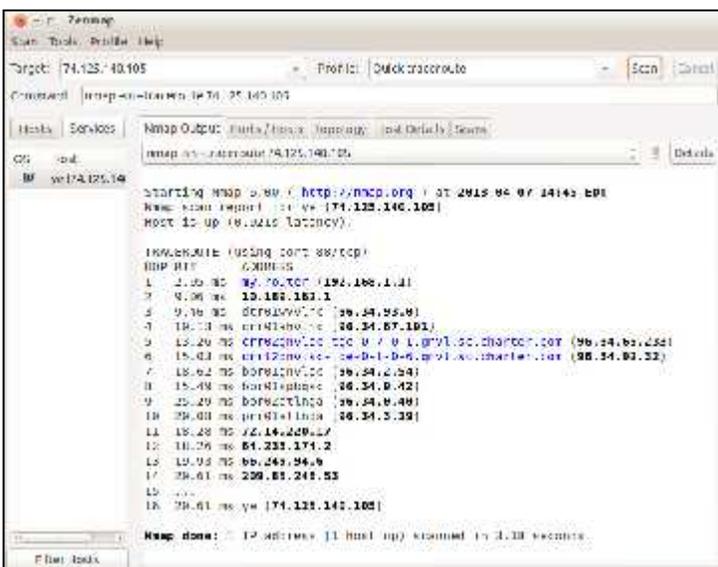
Did you know that the Prescott Public Library has a program of Computer mentoring on a one-on-one basis? They have several experienced volunteers who will work with you using one of the Library computers.

All you need to do is make an appointment with either the "Ask a Librarian" personnel or go to:
<http://www.prescottlibrary.info/>.



In this case (the WAP), the operating system is Linux and the one open port is 80.

Zenmap can also show you the route your data takes as it travels to its final destination. For example, let's again use www.google.com at 74.125.140.105. We enter this into the target box and select *Quick traceroute* as the scan. The screenshots show both the text and graphic results:



In this case, our test message made 16 hops on its way to Google, although other tests would provide slightly different results. You can also view these results graph-

ically, but I find the text output easier to understand and to be more complete. There are other network tools, but Zenmap is included in the Parted Image toolkit (discussed in my April 2012 article, available at <http://www.bcug.com>), which I always have with me. There is extensive documentation for this useful program on the Zenmap Web site, accessible through the Help menu button visible in the screen-shots.

Taking a few minutes to explore your home network will remove much of its mystery and could prove valuable in solving future problems.

Corel PaintShop Pro - Raster and Vector Objects

by Lynn Page, Editor, Crystal River Users Group, Florida

July 2013 issue, CRUG newsletter

www.crug.com

[lcpage46 \(at\) q.com](mailto:lcpage46@q.com)

When I started using PaintShop Pro one of the things that confused me is the difference between raster and vector objects. So I decided to explain a little of what I have learned. PaintShop Pro is basically a raster application with vector capability.

A key point is that each type of object can only be on their proper layer type. Raster objects on raster layers and vector objects on vector layers. So new objects created in PSP will be drawn on either a raster or vector layer depending on the object being created. If you are on a raster layer and add a vector object it will be placed on a new vector layer. Similarly a new raster object added while on a vector layer is placed on a new raster layer. Vector objects can be converted to raster objects and is required to add effects to them.

Raster Objects

Raster objects are what most of us think about when using a photo editing application. Raster layers store information by using pixels. This is why when you zoom way in on an image, you see small squares. Each is a pixel. The detail of a raster object is only controlled by the number of pixels. So with high resolution an image can contain subtle details. It also allows for detailed and complex editing and customization.

Since the image is a group of pixels, it can't be enlarged too much without losing qual-

Continued on pg 7

ity. This is like trying to blow up a small section of a digital camera image well above its resolution.

Vector Objects

Vector: objects/shapes are based on mathematics. Because the edges of vector objects are based on formulas they can be infinitely enlarged without losing quality. Vector layers store the instructions to draw the object not pixels. Another difference is that on a vector layer, each object is independent and can be moved without affecting the rest of the layer.

Anything created with the Pen or Preset Shape tool is a vector object represented by a bounding box. It has properties like line style and fill color. Each object is defined by a path made of contours and nodes. Text can be created as a selection of vector object. I personally create text as a vector.

If you try to apply an effect to a vector object PSP prompts that it must be converted to a raster layer. So this brings up one important point. If you want to apply effects to a particular vector object create it on a separate vector layer. When a vector layer is converted to a raster layer all objects on it are grouped. So an effect is applied to everything on the raster layer.

How to Write, Publish and Promote Your Book for Free Using Technology

By Bohdan O. Szuprowicz, Member, Sarasota PC Users Group, FL

www.spcug.org

editor (at) spcug.org

Millions of people all over the world want to write and publish a memoir, a novel, or share their grandmother's favorite recipes. They spend months and years chasing agents and publishers only to face endless rejections.

But times have changed. The latest technologies make it possible for anyone who can get on the Internet to become an author, publisher, and promoter of anything he wants to write, whenever he wants to do it, and all without spending any money in doing so.

All you have to do is write your stuff, edit it, and follow instructions of various services to format your text, design a cover, price the book, select a

publicity program, and boast about your achievement to book review editors, on Facebook, Twitter or your own E-mailing lists.

Yes, all those functions are being offered to would-be authors at a price by masses of editors, agents, consultants and promoters. They took the trouble of reading the instructions and now they try to cash in on it. You do not need them if you follow the instructions yourself.

The simplest way to start is to go to Amazon's website, which is the largest online seller of books. You are looking for Kindle Direct Publishing (KDP) which will provide you with a free instruction booklet how to format your manuscript in Microsoft Word for publication by Amazon as a digital book. So you just write your book in Word and follow simple instructions about spacing, page ends, chapters etc. Once your manuscript is finished, you follow the instructions how to publish it on Kindle and that's all there is to it.

You also set the price that you may vary at will as time progresses. Amazon sells your book and you get a royalty of 35% to 70% depending on arrangements.

There are close to 2 million titles on Amazon so it's important that your book has a cover that is distinctive and attractive to readers. You can design your own cover using Picasa collage functions which is also free. It offers hundreds of fonts and colors and you can include any photographs or images you like. The important thing to remember is the fact that on the screen of a tablet or an E-reader these covers are thumbnail-size. As a result you should make sure that the size of title lettering and colors are contrasting and show up clearly in black & white on many E-reader devices.

Once your book is on Kindle you want to let the world know that it has been published and where to find it. If you stick to digital publishing there is no problem of distribution or costs of sending the book by mail. It is delivered via the Internet to the buyer who can read it on about a dozen devices such as E-readers, iPads, PC's, iPhones, and various smart phones.

Continued on pg 8

There are several publicity websites that can be used to announce the publication of your book. Most offer a basic free service as well as paid versions depending on distribution requirements. Once you follow the instructions of a press release site you can also include the image of your book cover and send the whole package to book review editors, TV or radio talk show producers, and your personal E-mail lists completely free of charge.

Better still, the URL's of such press releases can be copied and simply pasted into other messages you are sending out. PRLOG is such a service used by the author and examples can found at <http://www.prlog.org>

Twitter and Facebook are the two most popular social media services that you can use freely to promote your book. Although Twitter allows only 140 characters per tweet, you can easily include the URL of your press release and also another link to an image, which may be a Picasa collage of your book cover, prices and reviews, as well as author biography and a photograph of yourself with your pet alligator. You can also use the Twitter search window to send such promo packages to selected recipients like your preferred talk show hosts, and book review editors, many of whom maintain distinct Twitter accounts.

Similarly, Facebook can be used to introduce your memoirs or novel with all the publicity materials to your friends and family. Other social media like LinkedIn, Pinterest and such, can also be used in providing free publicity for your book depending on type of audience you are seeking.

In short, the technology is here to be used and most of it is free. What it means is that anyone can become a published author literally overnight.

Interesting Internet Finds - August

Compiled by Steve Costello, President / Editor, Boca Raton Computer Society, FL
<http://ctublog.sefcug.com/>
editor@brcs.org

In the course of going through the more than 200 RSS feeds, I often run across things that I think might be of interest to other user group members.

The following are some items I found interesting during the month of August 2013.

Sandboxes Explained: How They're Already Protecting You and How to Sandbox Any Program-[http://www.howtogeek.com/169139/sandboxes-explained-](http://www.howtogeek.com/169139/sandboxes-explained-how-theyre-already-protecting-you-and-how-to-sandbox-any-program/)

[how-theyre-already-protecting-you-and-how-to-sandbox-any-program/](http://www.howtogeek.com/169139/sandboxes-explained-how-theyre-already-protecting-you-and-how-to-sandbox-any-program/)

Print Files Remotely in Windows with Google Cloud Print - <http://www.maketecheasier.com/print-files-remotely-in-windows-with-google-cloud-print/2013/07/31>

Don't Get "Smished": How Scammers are Targeting Your Smartphone -<http://www.dailybits.com/sms-phishing/>

How to install a fully portable desktop on a USB for on-the-go access-<http://www.techrepublic.com/blog/linux-and-open-source/how-to-install-a-fully-portable-desktop-on-a-usb-for-on-the-go-access/>

How To Use Skype to Share Your Computer Screen-<http://www.groovypost.com/howto/skype-share-computer-screen/>

Ultimate Windows 8 Wi-Fi Troubleshooting Guide-<http://www.online-tech-tips.com/windows-8/ultimate-windows-8-wifi-troubleshooting-guide/>

Stop Android 4.3 from always scanning for Wi-Fi networks-http://howto.cnet.com/8301-11310_39-57596807-285/stop-android-4.3-from-always-scanning-for-wi-fi-networks/

How to Return a Lost Phone in Four Easy Steps-<http://www.makeuseof.com/tag/how-you-can-return-someones-lost-phone-by-thinking-like-a-thief/>

How to Fix Annoying Multi-Page Articles All Over the Web-<http://lifehacker.com/how-to-fix-annoying-multi-page-articles-all-over-the-web-1164869508>

Most Fridays, more interesting finds will be posted on the Computers, Technology, and User Groups Blog, under Creative Commons licensing.

Recent posts:

<http://ctublog.sefcug.com/interesting-internet-finds-august-23-2013/>

<http://ctublog.sefcug.com/interesting-internet-finds-we-august-16-2013/>

<http://ctublog.sefcug.com/interesting-internet-finds-we-august-9-2013/>

<http://ctublog.sefcug.com/interesting-internet-finds-we-august-2-2013/>