

# Wavelength

## Greetings,

Welcome to the October Newsletter



This month I want to highlight safety. By that I mean the safety of your data whether it's on a PC, Laptop, Tablet or Smartphone.

Data is all the photos, family history, passwords, emails, letters, in fact everything that you have saved on a device and want to keep.

Where computers and their data are concerned there are two basic types of threat. One is the more obvious where your device has been hacked via the internet or where you have allowed one of the many phone scams access to your computer.

To keep hackers at bay, make sure that you have an anti-virus program set up. Some like Norton and McAfee will cost \$ while others like AVG and Avast are free and as far as I can tell are just as effective.

Where phone calls are concerned, I can assure you that Microsoft, Apple, and any bank will **NOT** call you and ask to 'confirm' details. If you get an email from any of the above and giving you an email address or phone number to call back, **DON'T**. Use the email address or phone number you always use or have in your contacts list and report it to your bank because they want to know about scams.

The other less obvious threat is to the data that you have on your device.

### **If it is only in one place it is not safe.**

We live in a country which is somewhat prone to earthquakes (but then you knew that) but fires, floods and similar disasters have been known and if the house goes up, or down, then the probability that your data has gone with it.

### **What to do?**

The principal thing is to have copy(s) of you data somewhere else. That can mean backing up to a back-up service, backing up to an external hard drive which you keep somewhere safe away from the house, or in the "Cloud". The "Cloud" of course simply means storing data on someone else's computer(s) via the internet where your data is encoded.

Whichever of these back-up strategies you chose, and they are all perfectly valid,

**DO IT**, Because if you don't, one day, sooner or later, you will regret it.

Remember. You only regret the things you don't do.

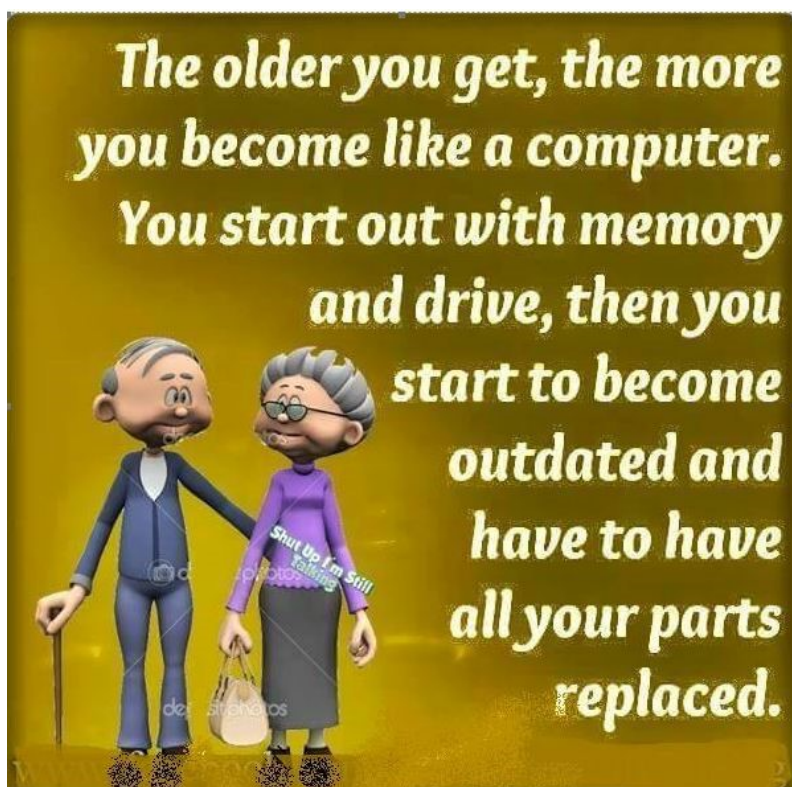
Stay safe

Bryan

## SeniorNet Marlborough Sounds

### Schedule for November 2018

Date and time	Event	Venue
02 Nov 1300 to 1600	Camera Club	Linkwater Hall
09 Nov 1000 to 1200	Family History	Picton Library
10 Nov 1030 to 1530	Seminar Day-Several presenters on various technology subjects	Linkwater Hall
15 Nov 1000 to 1130	Fraud Awareness in partnership with WestPac	Picton Library
15 Nov 1300 to 1600	Drop-in Day. Bring your issues to us	Linkwater Hall
22 Nov 1000 to 1200	Smartphone Workshop	Linkwater Hall



And the next generation picks up!!!



# SeniorNet Marlborough Sounds

Digital Imaging Group:: photos from “Our Fav Subject”



# SeniorNet Marlborough Sounds

*What's the difference between a hub, a switch, and a router?*

In a word, intelligence.

Hubs, switches, and routers are all devices that let you connect one or more computers to other computers, networked devices, or even other networks. Each has two or more connectors called ports into which you plug in the cables to make the connection. Varying degrees of magic happen inside the device and therein lies the difference. I often see the terms misused, so let's clarify what each one really means.

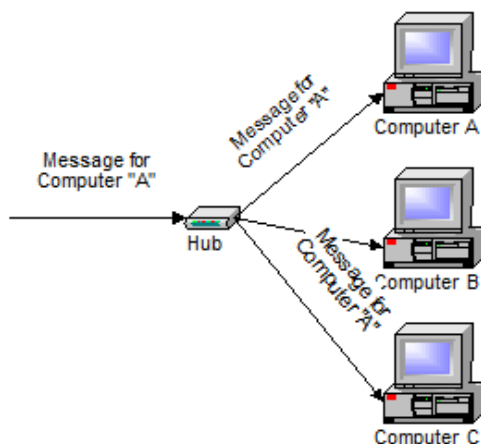
Sponsored by Ask Leo!.

## Hubs

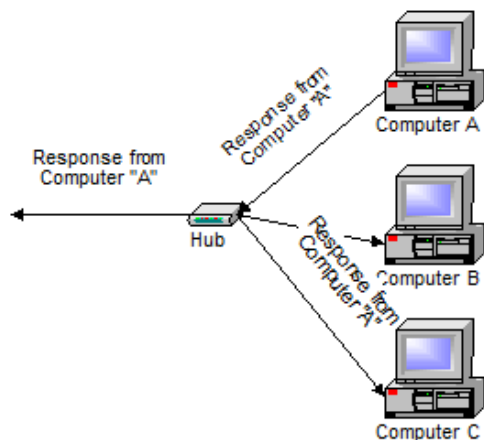
A **hub** is typically the least expensive, least intelligent, and least complicated of the three. Its job is very simple – anything that comes in one port is sent out to the others.

That's it.

If a message comes in for computer "A", that message is sent out all the other ports, regardless of which one computer "A" is on:



And when computer "A" responds, its response also goes out to every other port on the hub:



Every computer connected to the hub "sees" everything that every other computer on the hub sees. The computers themselves decide if they are the targeted recipient of the message and when a message should be paid attention to or not.

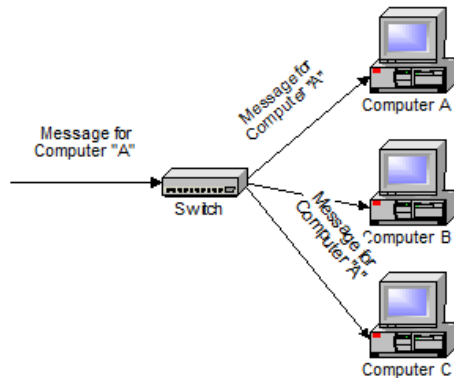
The hub itself is blissfully ignorant of the data being transmitted. For years, simple hubs have been quick and easy ways to connect computers in small networks.

# SeniorNet Marlborough Sounds

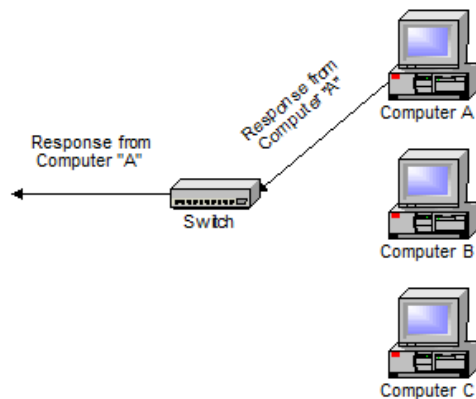
## Switches

A **switch** does essentially what a hub does, but more efficiently. By paying attention to the traffic that comes across it, it can "learn" where particular addresses are.

Initially, a switch knows nothing and simply sends on incoming messages to all ports:

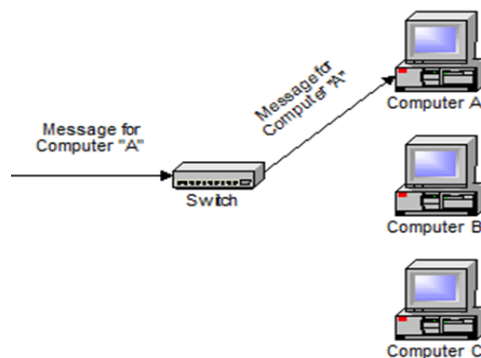


Even accepting that first message, however, the switch has learned something – it knows on which connection the sender of the message is located. Thus, when machine "A" responds to the message, the switches only need to send that message out to the one connection:



In addition to sending the response through to the originator, the switch has now learned something else – it now knows on which connection machine "A" is located.

That means that subsequent messages destined for machine "A" need only be sent to that one port:



Switches learn the location of the devices that they are connected to almost instantaneously. The net result is that most network traffic only goes where it needs to rather than to every port. On busy networks, this can make the network *significantly* faster.

# Routers

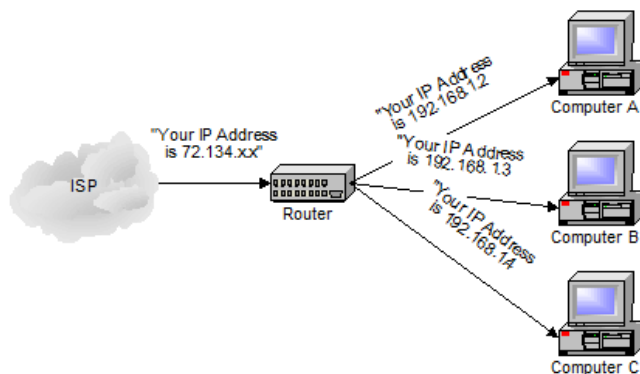
A **router** is the smartest and most complicated of the bunch. Routers come in all shapes and sizes – from the small, four-port broadband routers that are very popular right now to the large industrial strength devices that drive the internet itself.

A simple way to think of a router is as a computer that can be programmed to understand, possibly manipulate, and route the data that it's being asked to handle. Many routers today are, in fact, little computers dedicated to the task of routing network traffic.

As far as simple traffic routing is concerned, a router operates exactly as a switch, learning the location of the computers on its connections and routing traffic only to those computers.

Consumer grade routers perform at minimum two additional and important tasks: [DHCP](#) and [NAT](#).

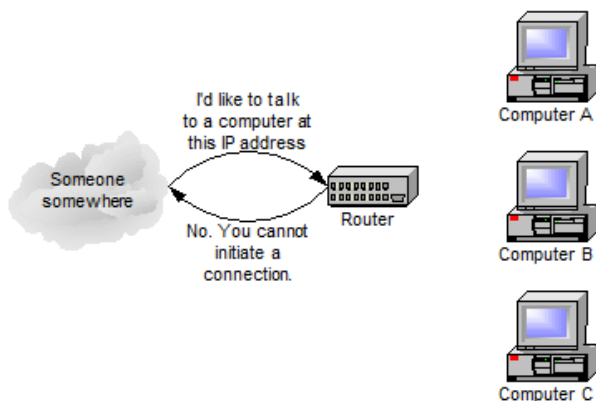
DHCP – Dynamic Host Configuration Protocol – is the way dynamic IP addresses are assigned. A device asks for an IP address to be assigned to it from "upstream" and a DHCP server responds with an IP address assignment. A router connected to your ISP-provided internet connection will typically ask your ISP's server for an IP address; this will be your IP address on the internet. Your local computers, on the other hand, will ask the router for an IP address and these addresses are local to your network.



NAT – Network Address Translation – is the way that the router *translates* the IP addresses of packets that cross the internet/local network boundary. When computer "A" sends a packet out, the IP address that it's "from" is that of computer "A" – 192.168.1.2 in the example above. When the router passes that on to the internet, it replaces the local IP address with the internet IP address assigned by the ISP. It also keeps track, so that if a response comes back from somewhere on the internet, the router knows to do the translation in reverse – replace the internet IP address with the local IP address for machine "A" and then send that response packet on to machine "A".

A side effect of NAT is that machines on the internet cannot initiate communications to local machines – they can only respond to communications initiated by those local machines.

The net effect is that the router then also acts as a firewall:



What that means is that malware that might spread by trying to independently connect to your computer over the network cannot.

All routers include some kind of user interface for configuring how the router will treat traffic. The really large routers include the equivalent of a full-blown programming language to describe how they should operate as well as the ability to communicate with other routers to describe or determine the best way to get network traffic from point A to point B.



## SeniorNet Marlborough Sounds



**DIG** Holiday Archive happy memories



More happy holiday pics at end of newsletter...

It occurred to me to ask why many websites no longer demand 'www.' at the front of the address. The answer is simple (in the end) but interesting to disentangle. First, let's explain the structure of a URL address – for example, [www.seniornet.com.au](http://www.seniornet.com.au) – working from the end forward. The last field, .au, specifies the country (Australia) except that the United States omits that field (the rest of the world can go hang). The preceding field is the category of the site; .com means commercial, .gov or govt means governmental, .edu means educational and .org means non-commercial (there are more). The third field in is the organisation's identification (seniornet in our case) and that defines which server computer on the Web will be tasked with handling your call. There may be further dot points preceding that one but they are handled by the organisational server, not by the internet system. For example, [library.ipswich.qld.gov.au](http://library.ipswich.qld.gov.au) is handled by the Queensland government server, which passes it to the Ipswich server, which in turn drops it to the library. The leading dot point is used by the final server to identify what service is required. www. signifies a browser access (World Wide Web) and is the most common, but there are also ftp. (File Transfer Protocol) which allows a file to be up/downloaded, and mail which services emails. Modern servers are smart enough to 'assume' that www. is required unless one of the others is asked for; in fact, many sites would use a different address if you wanted to use ftp or mail. Therefore, that is why you can (usually) skip www. But, don't blame me if you don't land up where you want to go! A final point – there are two formats (called protocols) used for most data on the Web <http://> which is effectively open to any person having access to your internet connection <https://> encrypted and cannot be read by others, and is always used by internet banking, Paypal, Inland Revenue, BNZ, ANZ, ASB etc., and any other security-critical organisations.

Filched from Otago seniorNet newsletter

## **Greg Otto at fedscoop wrote this interesting piece about IBM's Watson-as-a-Service.**

Otto writes:

IBM announced last week it has moved its cognitive computing system into the cloud to form the Watson Discovery Advisor, allowing researchers, academics and anyone else trying to leverage big data the ability to test programs and hypotheses at speeds never before seen.

Since Watson is built to understand the nuance of natural language, this new service allows researchers to process millions of data points normally impossible for humans to handle. This can reduce project timelines from years to weeks or days.

The ability to understand natural language queries is a big deal. You can ask, for example: "I'm going to be in Boston. I like basketball. What do you suggest, Watson?" You might get several answers: Celtics tickets, Boston College tickets, Harvard tickets. Or in the offseason, Watson may suggest you drive to the Basketball Hall of Fame in Springfield (MA). Companies are already using Watson this way. Fluid, Inc.'s Watson-based retail solutions deliver granular results to queries such as "I am taking my wife and three children camping in upstate New York in October and I need a tent." Consider this: Watson has been taught to pass the medical boards. Would you trust it to diagnose you and prescribe medication? What if you claim to be in pain (e.g., back pain, migraines, depression) and Watson doesn't believe your subjective input? Here's more food for thought: What if Watson could learn to code? Why not? It's hardly heretical to suggest that as Watson works with developers, it will one day be able to generate solutions based on a natural language query. That's equally exciting and worrisome.



## SeniorNet Marlborough Sounds

### SeniorNet Committee:

Please contact any one of us if you have any comments or questions.

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Use this space....

Buy, sell, exchange

Contact editor with details

### WHEN TO SELL YOUR PROPERTY?

The standard response when you're thinking about selling your home but are not sure when, is "sell in spring". And there's plenty of truth in that as warmer, drier weather and post-winter itchy feet drive potential buyers out to open homes.

For a Free, No Obligation Confidential Appraisal of your property –

Contact either Brenda Davey,  
Ash Davey, Carolyn Burn or Grant Douglas

Ph 03 573 6699, 36 High Street, Picton

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**Harcourts**

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