

Intro To Technology

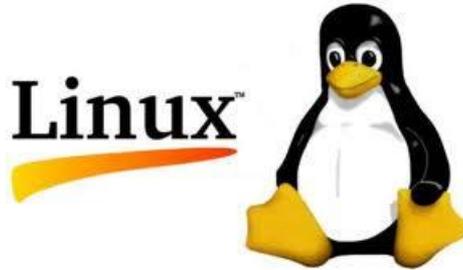
Logandale Nevada Stake Technology Conference

March 16, 2013

Confused?



Linux™



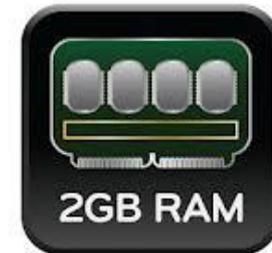
ANDROID



Windows 8



How about now



The Personal Computer (PC)

- System Requirements
- Operating System
 - Windows 8 32 bit or 64 bit
 - 32 bit is limited to 4 Gb of memory
 - 64 bit can use 128 Gb of memory and higher
 - To run 64 bit computer must have a 64 bit CPU. All new CPUs are 64 bit.
 - Programs designed for 64 bit run faster
 - Today very few 64 bit programs
 - 32 bit programs run on 64 bit operating system, but 64 bit will not run on 32 bit operating systems
 - Generally 64 bit Windows requires 64 bit hardware drivers. Might need to replace some hardware such as printer if you upgrade to 64 bit.

The PC

- Other operating systems
 - Windows 7
 - 64 or 32 bit
 - End of Life Jan 2020
 - Windows Vista
 - 64 or 32 bit
 - End of Life April 2017
 - Windows XP
 - 64 or 32 bit (64 bit rarely installed)
 - End of Life April 2014
 - Linux
 - Very stable
 - Open Source and Free
 - Android is based on Linux
 - Limited number of programs that support Linux

The PC

- Memory
- Random Access Memory or RAM
 - Computer loads running program into RAM so that it can quickly access it.
 - Computer can create virtual memory on your hard disk to increase the amount of memory. Very slow. If you think that your computer is running slow, watch the hard drive light. If it is flashing a lot while you are running a program, it could be using virtual memory. In this case, increasing the amount of RAM will speed up your computer.
 - I recommend 4 to 8 Gb of RAM on a new PC.

The PC

- Hard Drive
 - Standard size is 500 Gb to 1 Tb
 - I wouldn't spend more on a larger hard drive unless you have a lot of movies to store.
 - Spindle RPM affects performance
 - 15,000 RPM generally performs better than 7,200.
 - In most home and business applications you should only access the hard drive when you load a program. Is it important that your program loads a couple of seconds faster?
 - Solid State
 - Faster but more expensive.
 - If you want a solid state drive , include a standard drive for storage
 - Raid Arrays
 - Raid 0: Two drives put together to make one big drive
 - Raid 1: Second drive mirrors first drive. Protects against failure
 - Raid 5 & 10: Used to create a large disk with protections against failure

The PC

- Video Graphics
 - Standard graphics on a computer should be good enough unless you play games that use heavy graphics
- CPU
 - Intel biggest maker of processors
 - I3, I5, I7
 - Generally the more cores and higher the clock speed the faster the processor. Search Internet for bench mark testing if interested in performance.
 - AMD
 - Generally less expensive
 - They make processors that are comparable to Intel. Look for bench mark testing to decide.
- Recommendation: If you have a choice, get an Intel I5 or I7 processor.

Laptops and Notebooks

- Differences
 - No CD/DVD drive in Notebook
 - Notebooks are smaller – the size of a notebook
 - Notebooks are lighter
 - Notebooks usually have smaller processors
- Considerations
 - Battery Life
 - Memory 4 to 8 Gb
 - Size and weight
 - What will you be using it for

Apple Mac

- Hardware more expensive than a similarly equipped PC or laptop
- Apple does not give you many customization options, but their basic hardware configuration is sufficient for most applications
- Most people who have Macs love them.
- Less likely to get infected with Malware or to be hacked
- Fewer programs run native on the Mac than on a PC.
- Can run a virtual copy of Windows on a Mac allowing you to run most Windows programs.
- Laptop and Desktop versions

Tablets

- Common tablets
 - iPad
 - Google Nexus
 - Kindle Fire
 - Samsung Galaxy
 - Microsoft Surface
- Considerations
 - Touch Screen – Can be difficult for some people to type, an external Bluetooth keyboard is an option on some tablets
 - Storage space – Tablets don't have hard drives. They use a solid state drive which is faster, but holds less data. More storage more \$

Tables

- Considerations (continued)
 - Internet Access (more on this in the wireless section)
 - Wi-Fi
 - Cellular
 - Operating System
 - Apple OS
 - iPad, iPod, and iPhone
 - More apps than Android
 - Apps more tightly controlled – less likely to get malware
 - Must get apps from Apple

Tablets

- Operating Systems (Continued)
 - Android
 - Kindle Fire, Google Nexus, Samsung Galaxy
 - Thousands of Apps
 - Download apps from Amazon, Google Play, etc.
 - Windows
 - Windows 8 is an attempt by Microsoft to get more of a market share in the Tablet and mobile market.
 - Windows is not as popular in this market
 - If you need to run Windows programs on your Tablet or mobile phone, this might be a good option for you.

Wireless Technologies

- Wi-Fi
 - Operates in the 2.4 or 5.8 Ghz range.
 - Name is a word play on HiFi and a catchier name than original 'IEEE 802.11b Direct Sequence'
 - Common Interferers: Other Wi-Fi, Microwave Ovens, Cordless Phones, Cell Phones, Vacuum Cleaners and walls especially metal.
 - Typical range 100 ft. indoors and 300 ft. outdoors. 5.8 Ghz has a slightly lower range, but might have less interferers.
 - Range can be extended with range extender or by adding additional wireless access points. In my experience ranges extenders work, but you take a performance hit when going through the extender.
 - Should use WPA2 encryption. Older devices might only support WPA or WEP.
 - Open Networks are dangerous
 - Your Internet could be used for illegal activities by someone else
 - Easy to snoop unsecured passwords and personal data

Wireless Technologies

- Wi-Fi (Continued)
- Wi-Fi Standards
 - 802.11b (Not very common today)
 - Operating Frequency 2.4 Ghz
 - Theoretical Max Speed 11 Mb
 - Typical Max Speed 4 to 5 Mb
 - 802.11g (Most common but losing ground)
 - Operating Frequency 2.4 Ghz
 - Theoretical Max Speed 54 Mb
 - Typical Max Speed about 20 Mb

Wireless Technologies

- Wi-Fi Standards (Continued)
 - 802.11n (Newest standard)
 - Operating Frequency 2.4 and 5.8 Ghz
 - 2.4 is most common
 - Theoretical Max Speed 300 Mb
 - Typical Max Speed 75 Mb
 - No need to buy a dual band wireless router if your remote devices don't support it.
 - iPhone 5 supports dual band
 - Some newer laptops and smart phones support dual band
 - Main advantage of dual band is that 5.8 Ghz usually has less interferers.

Wireless Technologies

- Cellular
 - 2G or 2nd Generation
 - Typical speeds about 100 Kb about twice as fast as dialup
 - 3G or 3rd Generation
 - Typical speeds on an uncongested network 1 to 2 Mb. AT&T and Verizon both offer 3G in Moapa Valley. Not sure about other carriers.
 - 4G and LTE (Long Term Evolution)
 - Typical speeds 5 to 15 Mb
 - I've measured 17 Mb near a Verizon Cooperate building in Fort Lauderdale and about 300 Kb in the Wynn Hotel during a Telecom conference
 - I expect Verizon and AT&T to offer 4G in Moapa Valley before the end of the year.
 - Beware of Data Caps. Most Cellular data plans have caps. Can get expensive if you go over your cap.
 - Video uses a lot of Data 4 to 8 Gb for High Def

Wireless Technologies

- Bluetooth
 - Operates in 2.4 Ghz range
 - Short range 30 feet or less
 - Communication at 1 Mb or less
 - Used to connect peripheral devices most commonly headsets, speakers, wireless keyboards, and mice.

The Cloud

- A non-technical definition of cloud is that it is the Internet
 - If you backup your computer to an off-site location, you are using the cloud
 - If you use Google Docs or Google Calendar, you are using the cloud
 - If you use Facebook or Flickr for your photos, you are using the cloud.
 - If you use email, you are using the cloud.

Internet Browsers

- Browsers
 - Internet Explorer
 - Most Popular?
 - Most Compatible
 - IE 9 defaults to search engine
 - Firefox
 - Evolved from the University of Illinois's Mosaic Web Browser
 - Doesn't default to search engine
 - Cool plugins available such as one that allows you to download and save YouTube videos
 - Not as Compatible as IE
 - Runs on most platforms
 - Open source

Internet Browsers

- Browsers
- Safari
 - Developed by Apple and run mostly on Apple Products
 - Doesn't default to a search engine
- Chrome
 - Might be the most popular browser
 - Defaults to Google Search engine when trying to go to Internet Address.
 - Developed by Google
 - Runs on most platforms

Search Engines

- Search Engines
 - Google
 - Bing
 - Yahoo
 - YouTube?
- Search for Logandale Nevada Stake Technology Conference to find website.

Email

- Free Email or ISP Email
 - Free email
 - Not private
 - No support
 - You can keep it if you change Internet providers
 - Android phones might force you to get a Google account. Windows 8 forces you to get a Microsoft.
 - ISP email
 - Support
 - Private
 - You generally have to give up your address if you change providers

Safe Computing

- Anti Virus
- Available for all platforms. I only recommend them for Windows.
- Anti Virus Programs are like Flu shots. They will only protect you from known viruses and may cause you to get sick.
- Popular Pay for Anti Virus Programs
 - Norton
 - McAfee
 - Kaspersky
 - Bit Defender

Safe Computing

- Popular Free Anti Virus Programs
 - AVG
 - Microsoft Security Essentials.
 - Avast
 - Malwarebytes (Great for cleaning an infected computer but you need to pay for the real time protection)
- Firewalls
 - Designed to keep people and other programs from connecting to your computer. You can also use them to restrict outgoing data on your computer.
 - Windows and Apple OS have built in firewalls you can get an add on firewall for Android, but you probably don't need it.
 - Router supplied by your ISP provides firewall protection

Safe Computing

- Content Filters
 - Use a database of rated websites. If the rating on the website matches the criteria on the filter the website is blocked
 - Not every website is rated
 - A restrictive filter may block all unrated websites
 - Your ISP may offer a content filtering option
 - Usually protects all devices in your home.
 - Some Security Suites have content filtering such as Norton and McAfee
 - A good free content filter is K9
 - <http://www1.k9webprotection.com/>
 - Software filters only protect the device that they are installed on.

Safe Computing

- Home Routers
 - Some Routers offer Time of Day Restrictions
 - Based on MAC Address
 - Could restrict Internet access on a child's iPod in the evenings
 - URL Filtering
 - Based on MAC Address
 - Might be used to block a child's iPod from accessing YouTube.