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Stay Safe Online ; Buying a Computer / Device

by Fred Laxton

## CHAPTER ONE

### *Staying Safe Online*

The reality of being online.

What are the dangers? They include:

- Constant attempts to attack your IP address.
- Viruses and other malware.
- Phishing attacks.

How do computers or devices get infected?

- A vulnerability in the operating system
- A vulnerability in an application
- These usually come through the web browser or email program.

How to mitigate or prevent the dangers?

- Use a router to get online.
- Follow the 3 Basic Rules for Online Safety
- Stay up-to-date on operating system and application updates/patches.
- Use a good anti-virus program for Windows or Android.
- How to safely search online.
- Use a Password Manager.
- Don't fall for Phishing.
- The Big Three applications that are insecure.
- Watch carefully when installing software.
- Use a secure platform.

#### **Use a router to get online**

Never, ever directly connect a computer to a cable or DSL modem. Always use a router in-between your computer/device and the Internet!

#### **The 3 Basic Rules for Online Safety:**

1. If you didn't go looking for it, don't install it.
2. If you installed it, update it.

3. If you no longer need it, get rid of it!

Reference: <http://krebsonsecurity.com/tools-for-a-safer-pc/>

### **Stay up-to-date on operating system and application updates/patches.**

- If your operating system is no longer supported with updates - it is time to either upgrade or get another computer/device! It is not safe to continue to use it. E.g. Windows XP is no longer supported by Microsoft.
- Your applications are another vector for attack. It is important to either keep them up-to-date...or get rid of them! Especially web browsers.
- Do not use Internet Explorer! Use Google Chrome, it is the best and most secure (more on this later).
- Windows user - Set a calendar appointment each month, to check all your updates - operating system and applications.

### **Use a good anti-virus program for Windows or Android.**

If you decide to use Windows, you must use a good anti-virus and anti-spyware program, and keep it up-to-date and run scans regularly.

The best free anti-virus out there at the moment is Bit Defender. It is among the most thorough, and has the least performance hit of them all, and is not intrusive with pop-ups and annoyances.

The best free anti-spyware out there is Malwarebytes Anti-Malware. The free version is not as good as the paid one - it doesn't not constantly protect you - you must manually scan. But it is very thorough. You may want to pay for the paid version. NOTE - anti-spyware software is not very good, in general, at stopping spyware, not nearly as effective as the anti-virus software.

Never install more than one anti-virus!

### **How to safely search online**

Many people are not aware that search results are a primary way to get your computer infected, or get tricked.

When looking at search results, be aware that the top area has paid ads. So that software you are looking for, may not be what you want, rather it is a paid ad for something else, possibly malicious.

And other links may not be for the actual software either. Other parties try really hard to subvert Google and other search results to trick users into installing something other than what they want.

I recommend the Site Advisor software from McAfee. It plugs into your web

browser and ranks the sites. However, I don't recommend anything else from McAfee - their other software is junk.

<http://siteadvisor.com>

### **Use a Password Manager**

Why am I including this?

- People don't know how to create a strong password, and it is too difficult to use.
- Most people use the same password across many services.
- So when Target, Home Depot, the IRS, the Federal Government, [insert the name of the merchants you use] are hacked, then the hackers can access your other accounts, too. How convenient for them!

Instead, you should use a unique, strong password for each site/service. That will help keep you safe.

I personally use [Lastpass.com](https://lastpass.com), as I know it is very, very secure. Encrypted everywhere, synced with my computers and devices, only you have the master password. Free on computers, \$12/year to add all your mobile devices.

Other password managers:

Dashlane: <https://www.dashlane.com/>

1Password: <https://agilebits.com/onepassword>

### **Don't fall for Phishing.**

Next, no software will protect you from phishing attacks. These are emails or pop-ups that prompt you for some information, like SSN, bank login, etc. They are a trick to solicit information from you.

Did you request this email? Most phishing comes in from spam email.

Never, ever click a link in an email where you must login or supply information.

Rather, open your web browser, and type in the URL of the site or use a bookmark, and go directly there.

Remember, banks and the IRS never, ever send important information over email, that requires you to login or "prove" your identity.

## **The Big Three applications that are insecure.**

*Adobe Flash Player*  
*Adobe Reader*  
*Java*

Don't use them!

First, you don't need them.

Adobe Flash Player, Adobe Reader and Java have a constant onslaught of bugs and security holes discovered constantly. They are not safe to use. And the good news is that you don't need them!

Use Google Chrome, and Flash Player is built-in, and more importantly, automatically and silently kept up-to-date.

Adobe Reader can open PDFs, but Portable Document Format is an open standard, and lots of programs can also open PDFs.

I currently recommend Sumatra PDF Reader:

<http://sumatrapdfreader.org>

Lastly, you don't need Java. Uninstall it!

## **Watch carefully when installing software.**

Uncheck all "add ons" and "options".

Don't just click "Next" over and over. Read what it says. If it has a "custom" or "expert" option, select it. This is how Java, Norton, McAfee and many other junk ware gets installed.

## **Use a secure platform**

Security is relative, and there is no such thing as 100% security, unless you unplug a computer and lock it in a room with no wireless access, which isn't very useful. But that doesn't mean that all computers and devices are equally secure or insecure.

*Very secure:*

Linux Live CD  
IOS - iPhone, iPod Touch, iPad  
Google Chromebooks

*Highly Secure:*

Macs running Mac OS X

*Somewhat Insecure:*

Android smartphones and tablets

*Very Insecure:*

Any computer running Microsoft Windows (any version)

So, what is the difference in security, from most secure to least? It is subjective, but I would say the iOS devices mentioned are 100,000 times more secure than a standard Windows computer. Yes, 100,000 times!

*Explain why a Linux Live CD is the most secure. (Knoppix: <http://www.knopper.net/knoppix/index-en.html> )*

*Explain why a curated App Store or Extension/App Store and operating system makes iOS and Chromebooks very secure.*

*The Mac OS X App Store is also curated, and out of the box, you cannot install third-party software on a Mac unless it comes from the App Store or is digitally signed by Apple.*

*Similar for Android (not curated)*

*Windows encourages third-party installs. Not built with online security in mind, but rather an after-thought and retrofitted.*

So, do your banking on a computer booted off a Live Linux CD, an iPhone or iPad or Chromebook.

If you use a computer for your banking (I do), use a Mac if possible. If on Android, be sure to have anti-virus installed.

I would be hesitant to do it on Windows, especially if you have a fair amount of money in your accounts and wire transfer capability.

Next, we talk about which of these computers and mobile devices are appropriate for you, when buying new.

## CHAPTER TWO

### *Buying a Computer / Device*

#### **Pros and Cons of various computers and devices**

*What you should buy would depend on what you want/need to do, and your budget.*

Here are the contenders (in order of security):

- iPad
- Chromebook
- Mac
- Android Tablet
- PC (Windows)

The main differences in the various options are the ability to:

- Automatically update some or all of the operating system and apps
- Play music CDs or watch DVD movies
- Plug in a USB thumb drive
- Printing
- Use a keyboard
- Availability of apps or software applications
- Have automatic backups
- Have a long life for the computer / device
- Retain the most value long-term for resale

**iPad - full-size starts at \$499 - recommend the iPad Air 2. iPad Mini 3 starts at \$399.**

#### **Pros:**

- Most secure.
- Easy to use.
- Automatic updates of the operating system and all apps.
- Many innovative and fun apps.

- Streaming TV and Movies - Netflix, Hulu+, Amazon Instant Video, etc.
- Supports Digital audio and video - iTunes or Spotify for music, iTunes for TV shows and Movies.
- Restore your apps, settings and documents from iCloud easily.
- 1.5 Million apps available to do most anything imaginable.
- Very fast in use, and does not slow down.
- Printing is available.
- Very long usage life. iPads seldom malfunction or break, so are a good long-term value.

**Cons:**

- New, full-size iPads start at \$499.
- No keyboard built-in. The on-screen keyboard can be cumbersome (although it is the best available). You can use a Bluetooth keyboard and/or case with a keyboard.
- No CD or DVD drive.
- Can't use USB drives.
- Limited storage on the device.
- Your printer must be wireless and support Apple's AirPrint. All new wireless printers do.

**Chromebook - 11" starts at about \$150 - recommend the Toshiba Chromebook 2, about \$290 on Amazon - 13.3" screen, full HD display**

**Pros:**

- Most secure.
- Works like the Google Chrome browser.
- Automatic updates.
- Streaming TV and Movies - Netflix, Hulu+, Amazon Instant Video, etc.
- Restore you apps, settings and documents from Google Drive easily.
- Very fast in use because of the Solid State Drive (SSD).
- Printing is available.
- Intel Processor available

**Cons:**

- The main drawback to a Chromebook is that it is intended to be online all the time. So if you don't have a wifi connection, there is little you can do with it.
- No CD or DVD drive.
- Limited storage on the device.

- Limited browser add-ons and apps.
- Limited memory.
- Your printer must be wireless and support Google's Cloud Print. All new wireless printers do.
- Avoid Chromebooks without an Intel Processor

**Mac - Mac Mini desktop starts at \$499, MacBook Air laptop starts at \$899**

**Pros:**

- Very secure
- Easy to use
- The MacBook Air set the standard for years for a lightweight laptop, and all Windows "Ultrabooks" are an attempt to copy it. But it is still better because it runs Mac OS X.
- While more expensive than some Windows PCs, they tend to last two or three times longer than a Windows PC, and retain more resale price. So they are a better value in the end. I bought a MacBook for \$800 on eBay, used it for three years, and sold it for \$700.
- Automatic updates to Mac OS X and applications from the Mac App Store.
- Free operating system upgrades (versus \$100 for a Windows upgrade, plus labor).
- You can install third-party apps if you wish.
- Streaming TV and Movies - Netflix, Hulu+, Amazon Instant Video, etc. The Mac offers the best computer video and audio experience, and the best apps are included.
- Apps included: iTunes, iMovie, iPhoto/Photos
- Office Suite included: Pages, Numbers, Keynote
- Supports Digital audio and video - iTunes or Spotify for music, iTunes for TV shows and Movies and many, many more services.
- iCloud backs up your calendar, contacts and iWork documents.
- Apps on the Mac are generally higher quality than on Windows.
- Very consistent, friendly user experience. Little to no popups or other annoyances.
- No need to defragment.
- No need for anti-virus (in my opinion).
- Better user experience for the same price as an equivalent Windows PC.
- You can run Windows and/or Windows apps...but it is complicated (virtual machine like VMware Fusion <http://www.vmware.com/products/fusion> or Parallels <http://www.parallels.com/products/desktop/> ).

**Cons:**

- Mac Mini requires a separate monitor, keyboard, mouse
- Windows users will have a small learning curve.
- Smaller selection of apps available than on Windows. But the apps are higher quality in general.
- Not everything is backed up.
- Higher cost than a cheap Windows PC.
- Little to no gaming support.

### **Android Tablet - from \$50 and up**

#### **Pros:**

- Fairly secure, but you should use anti-virus.
- Fairly easy to use.
- Less expensive than an iPad (but built cheaper, shorter life).
- Automatic Updates.
- Many innovative and fun apps.
- Streaming TV and Movies - Netflix, Hulu+ (Amazon Instant Video may/may not work), etc.
- Supports Digital audio and video - Google Play Store or Spotify for music, Google Play Store for TV shows and Movies.
- Restore some of your apps and settings and documents.
- 1.5 Million apps available.
- Fairly fast in use, depending on device.
- Printing is available on more recent Android devices.

#### **Cons:**

- Apps not as polished or compatible as on iPad.
- Many, many cheap, inferior Android tablets available.
- User experience is not as good as the iPad. Inconsistency, not as polished or smooth.
- Not everything is backed up automatically.
- Apps often come to iPad first, later (if at all) to Android. Often don't work as well on Android.
- Apps are prone to slowdowns.
- No keyboard built-in. The on-screen keyboard can be cumbersome. You can use a Bluetooth keyboard and/or case with a keyboard.
- Not as many cases/keyboards available on Android because of device fragmentation.
- No CD or DVD drive.
- Difficult to use a USB drive - must have an adapter.
- Limited storage on the device.
- Your printer must be wireless and support Google's Cloud Print. All new wireless printers do. Not all Android devices support printing.

## **Windows PC - from \$300 and up - a quality Windows laptop starts at \$650**

### **Pros:**

- Cheap Windows PCs are available. But expect to buy a new one every two to three years because of low quality and malware infections.
- Familiar to existing Windows users, although each new version breaks some of this, especially Windows 8.
- Automatic updates for Windows and some Microsoft apps.
- Widest selection of computer apps available.
- Streaming TV and Movies - Netflix, Hulu+, Amazon Instant Video, etc. Windows offers an adequate video and audio experience, but poor apps are included. You have to purchase quality video apps.
- Supports Digital audio and video - iTunes or Spotify for music, many services for TV shows and Movies.
- Windows 10 is expected to be released in July 2015, and should address some of these issues. Expect it to be buggy at first, so I would delay upgrading.
- Free upgrade to Windows 10 for Windows 7 or 8 users, for the first year that Windows 10 is out.

### **Cons:**

- Most insecure of all. As of 2014, there are approximately 27 million viruses there for Windows. See <http://cloudtweaks.com/2014/04/cloud-infographic-computer-virus-facts-stats/> Mac has almost none, and you generally have to give them permission to install.
- Not easy to use. Windows 8 has a split personality - desktop and tablet - which confuses users.
- Third-party apps have no consistent or automated updates.
- Almost no settings are saved automatically.
- No unified backup mechanism like iCloud or Google Drive.
- Windows PCs come loaded with junk ware and trialware. No quality software is included.
- Many, many junk apps out there for Windows. You must waste time weeding out the poor ones to find one quality app.
- Inconsistent user experience, because new Windows PCs often get loaded with malware and spyware, interfering with their operation. Hijacking the home page, browser popup windows, hijacking the search function, etc.
- Older Windows versions require manual defragmentation. Newer ones do it automatically, but still, they need it because the file system is inferior.
- Running a Windows machine without up-to-date anti-virus is exceedingly dangerous to your finances and privacy.

- Historically, upgrades are paid and cost \$100 or more (sometimes much more).

I am available to do a computer tuneup on your Windows PC or Mac, and advise on purchasing a new computer or mobile device.

<http://infotechdesign.net/web/tuneup-service>

A computer tuneup can extend the life of your older computer. And even new Windows PCs should have a tuneup before you use them, because the junkware included will not keep you safe.

