



A Recipe of Computing Safety

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<http://www.ck-wong.ca/technology/a%20recipe%20of%20computing%20safety%2020051030.pdf>

Introduction

In a previous article, I outlined the general principle of computing safety and the pitfalls to avoid. Some of the idea could be easily implemented; like downloading a specific software package and installing it. Some of them could use some very specific picture to explain it. This is the more pictorial repackaging of the principles. Rather than asking my reader to get the other article, I shall repeat the discussion here and hope there is an improvement on readability.

Hazards

Hazards refer to the factors or events that cause you lost your precious data or equipment or computer cycles. Some of them you are familiar with and some of them you may not. The following are as summarized list:

- **Electrostatic & Electricity** – Computer and its supporting devices uses electricity. So it will plug into the house circuit. There are two common problem we should avoid the adverse effect electrostatic and electricity. If you have a very dry environment, sparks could shock the equipments especially the hand held devices. Another form of electrostatic is the thunder. The static created between the high cloud and the earth which comes down from the top of the roof and hit the electricity circuit that could fry you. Similar but less intense is the electric surge coming from the hydro. Failure of transformer or breaking of power cable could create that surge you want to avoid. Luckily, this could be prevented with a surge protector. Please do not consider a cheap \$5 one because the solution I suggest will force you to one at the range of \$30 - \$50. The one I suggest is one has surge protection more than the electricity because it concludes the surge from telephone line and television source. A good surge protection power bar usually comes with an equipment lost insurance. So it is money well spend. Please read the label when you buy.
- **Lost of Power** – All computers will stop working immediately when the juice stops to flow. It does not have any problem if you can freeze that very moment. There are a few things could not stop and freeze. The memory is a piece that continuously needs the feeding of electricity even it is very minute. Without it you lost the work you are creating. The hard drive is another thing that has to maintain its revolution and use electricity to perform the read and write function. The disk's read and write is done by a disk head which is flying a few micrometers above the surface. It is a technology miracle to have the tiny head to keeps it position without hitting the hard surface and scratch the material that stores the information. The head floats on a cushion of air created by the disk's rotation at a

very precise speed. When the electricity is gone, the rotation slows down in an uncontrolled manner. Turbulent could be created that causes the head hits the disk. In order to avoid the lost of data on your disk, you need to ensure you have enough time to shut down the system. This could be easily done using uninterrupted power supply which has 3 functions: a battery to provide the juice when power is gone, surge protection for power and most of the time phone and cable, the electronic that tells the computer to shutdown.

- **Immunity** – Viruses and worms are the most common intruders that could cause you lost data, corrupt your system and lost computing power. There is a more severe problem. Worm could cause you legal issue because it could launch an attack a selected target originated from your computer. It is interesting enough that the first computer virus was developed in Bell Lab for research purpose on a Unix system. However, the common virus or worms are targeted at Microsoft products. If you are running Unix or Mac, there is still a need to have antivirus. Unfortunately I could not offer you the Unix antivirus suggestion.

To avoid all these risks, we should install antivirus software. The most common one are MacAfee and Norton. Both are paid commercial product. Should you in the Windows environment and insist on the free software principle, AVG is a product that offers home user a free version. It could be downloaded from www.download.com.

On many motherboards, there is an antivirus features that detects the writing to the boot block or other hidden areas. I would not recommend it because when that happens it is very dangerous. The motherboard could only deny their write but the consequence may cause other corruption.

- **Spyware** – Spyware could be embedded in many software packages. You can get them by installing software or just visiting web pages. In a later case, it through the Java script or the script of your operating system and install it on the system. The nature of the spyware is to do logging and transmit the info to the mother ship as often as possible. The spyware causes you lost privacy, lost disk space that keeps those logs, lost CPU power because it tries to find out what you are doing and finally you lost your network bandwidth because it transmits data to mother ship.
- **Data integrity** – From time to time, we may lost data because we accidentally lost them. It could be caused by the deletion or lost in time. We should organize our data more systematic and do backup. In the modern time, our disks are very large. We have to face this challenge and also taking advantage of it. If you want to archive something such as your daily life picture of the family and family video you could either buy another disk to save it or even better write it on DVD. The cost of DVD has dropped significantly that you could hardly consider a CD writer is a good deal because DVD can store about 5 time more than a CD. If you need to retrieve the data fast, for example you need to get to your backup email, you

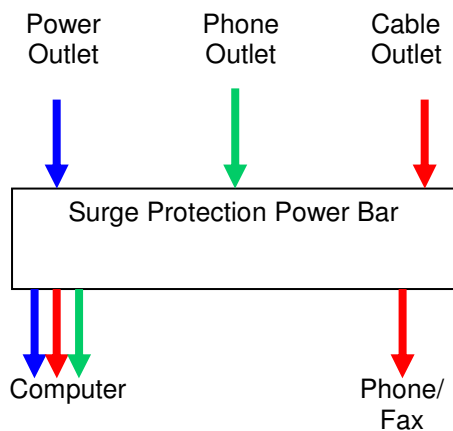
could split that 200 gigabyte disk into two parts: 120 G and 80 G. The 80 G partition could provide ample backup space because 120 G partition has to store all your programs.

- **Firewall** – System can be broken in via weakness of the operating system or through accounts leak. If you could prevent the intrusion from undesirable origin you need to put a firewall between your computer and internet. A very effective and commonly recognized leader is Zonelab's Zonealarm for Windows. It offers you the security and peace of mind. Since the home user vanilla version is free, you would love it better.
- **Wireless** – For your mobile convenience, many home or SOHO are equipped with wireless router. If you use it just the way out of the box, you have two challenges. The first is that your neighbor may have the same wireless router. It would be confusing and sometime could not establish connection to your router. Second others may use your router for illegal download and activities. You would be responsible because the traffic traced back to your router which you are the owner. So it has to be customized. Later we shall talk about the customization.

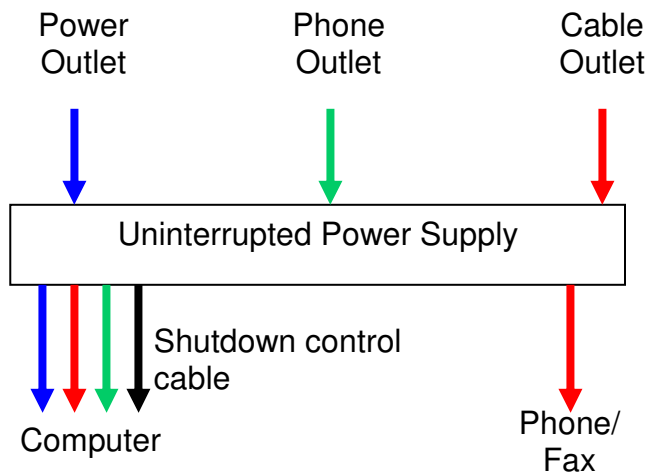
Electrostatic & Electricity and Uninterrupted Power Supply Hook Up

The following are three different connections you could choose depending on your need and situation.

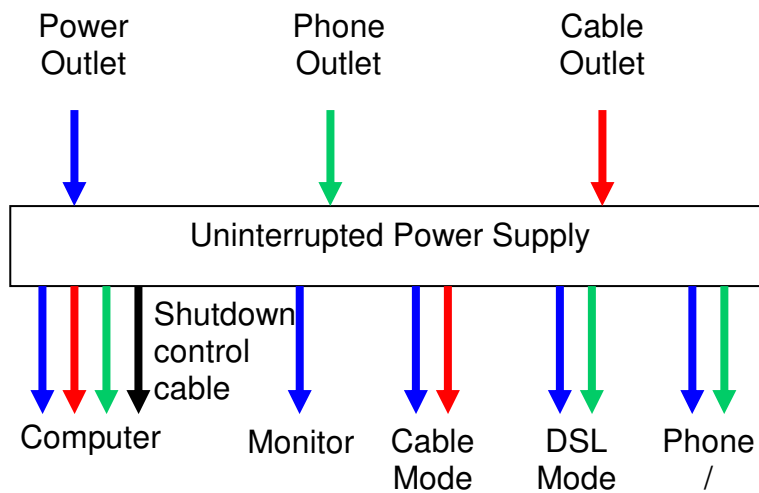
Option 1 with surge protection power bar.



Option 2: Small capacity Uninterrupted Power Supply for computer.



Option 3: Large capacity Uninterrupted Power Supply



..... more to come.