



The Online Marketer's PC Protection Guide

INSIDE: What Every Online Marketer Needs to Know

- Keep your data safe
- Keep your systems running
- Keep your business profitable

By Jason Tarasi

Before — or after — you read this Guide...

***"Discover How You Can Build A Virtual Fortress Of
Defense Around Your Online Business With A Free
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The Marketer's Protection Newsletter"

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PC Protection Means Avoiding Disaster

“It Won’t Happen To Me”

Actually, it almost certainly will and it probably has, even if you didn’t think of it this way before.

Losing data is a part of reality in our computer-oriented world.

How many times have you spent time working on a document, only to have something happen that makes the document vaporize? Or an FTP upload that dies as soon as you walk away from your monitor?



These may not be “disasters” but they indicate the basic frailty of digital data. The machinery on which that data runs and is stored is also at risk — and probably much greater risk than you’ve thought about before.

The good news is, as in many things an “ounce” of prevention beats a pound of cure.

Today’s data risks are higher than ever, especially for those of us who rely on digital media for our livelihood, but the solutions are also easier and frequently less expensive than ever before.

By the time you’re done reading my book, you’ll know everything you need to about how to keep your valuable data and systems humming along, so your cash register can keep ringing.

What’s a “disaster”?

A disaster in digital media is anything that either costs you unplanned money or unplanned time or both — things like:

- Hard drive crashes
- Power interruptions and power surges
- Broadband or other connectivity interruptions
- System failure
- Fires and overheating
- Earthquakes...

There can be other disasters too, like when your top programmer quits without notice and doesn’t leave any notes on how to update her databases. But for our purposes we’re focusing on hardware maintenance related issues, software security and environmental impacts.

There are some things you can avoid, and some things you can only hope to minimize in their impact without being able to avoid.

The general issues, options, best practices, and a few products to consider are the subject of the next thirty pages.



Fire

There are some disasters you can avoid completely.

The fates won't rest a Big Mac on your keyboard, but you might.

Don't.

There are others you can't — like acts of God, acts of your cranky neighbor, terrorists, or the weather.

The trick here is to plan for their *possibility* and take steps that make sense in context of managing risk.

Fire

Heat is the enemy of all things electronic. *Pssst* — fires are hot. Very.

While electronics generate their own heat (which can be significant, and if not managed well can be a problem too, see below) first we are concerned with external destructive heat like your building burning down.

A piece of paper can be locked in a box that will most likely withstand most any conventional fire. So can a data storage item like a diskette or jump-drive, in theory, but the damage point of such devices may be well below their melting point.

Fire Can Easily Destroy Everything In A Building

This might be obvious but we have seen smart people do some pretty dumb things, like keep the original of some data on a computer, keep a backup of the data on a CD in the desk on which the computer is sitting, and keep another backup in a lockbox in the closet six feet from that desk.

Sure, if the computer drive dies you're fine, but how hard is it to imagine a fire that destroys everything in a single room? It's easy.

We'll consider how to survive a fire (from a data and systems perspective) in a few minutes, but first, let's outline some guidelines. These are useful for more than just fires, too.

1. **Keep backups in separate physical locations.** And we don't mean here, and four feet from here. We mean here, and Cleveland. Or here, and the World Wide Web. Or here, and in a safety deposit box on the other side of town.
 2. **Update your backups on some understandable schedule.** We knew a guy who smugly told us (after his office burned down) he was "all set" because he had backups. Well, he had backups up until about two years before the fire and nothing sooner, which rendered them almost useless. Use it or lose it, as they say.
 3. **Have good insurance on your office equipment.** Also, pay the premiums...
-



We Must FIGHT The Fire

OK, you have a Rambo complex which you are projecting on onto your computers and data.

Your first line of defense is avoiding having the fire start in the first place. Your second is not caring that it did because you (a) wisely backed up everything to separate physical location and (b) had good insurance and paid the premiums.

But *nooooo*, you want equipment and data that will give the fire the proverbial finger.

One such option is The Information Safeguard System™ from [The Datafortress™](#). This system takes the fireproof lock-box to a whole new level. *The Datafortress* is intended to protect your whole system in the event the room in which it is housed burns.

These kinds of systems are very expensive, but may be important if you run the kind of business where downtime can cost you a fortune.

(The technologies in this area are so rapidly changing, and retail pricing is so scant, that I'm reluctant to give much guidance other than to say that yes, you can in fact put your entire computer system except the input and output devices into what amounts to a fireproof box. See *Resources* section for more on such boxes for your data and equipment.)

There are conventional fire-fighting methods also, like fire extinguishers.

Even if you never get near a fire, you still need to worry about heat, since your computer itself generates enough to cause harm!

Heat without Fires

Sources of heat in your computer

There are several sources of heat inside your computer. These include hard drives, integrated circuit boards (i.e. "motherboards"), power supplies, and batteries.

Let's look at how they can be trouble.

Fire...and friends

Heat without Fires

You've heard that there's "no smoke without a fire," which is generally true, but there can be a lot of heat without a fire.

Microwave ovens make heat without any kind of flame.

So do a lot of the components of your computer systems.

Any system that creates a lot of heat by its normal operation needs to be continually cooled or you have troubles ranging from reductions in performance to a complete failure. Think about your car — it makes a lot of heat burning all that fuel, and your car uses a system of fans, coolant, water, and outside air to regulate itself to keep functioning without anything going wrong or worse.

Your computers generate more heat than you think.

A typical desktop can generate 175 watts from normal operations!

As long as the system is being cooled this is OK, but when it's not, you can have serious problems.

How your computer cools itself

Your computer uses a combination of two basic methods of keeping cool.

One is a fan (or multiple fans). The fan works to either expel hot air from the case of the machine, or bring cool air in, or both.

The second is what are called "heat sinks," small metal structures designed to keep heat generated in one area from reaching a more sensitive adjoining area and doing damage.

If you have ever used a soldering iron, you may have used a heat sink to keep a thin wire from melting — since the wire could handle much less heat than the circuit to which the wire might be connected.

Heat sinks generally don't fail, though in theory they work something like a circuit breaker though when they "break" rather the circuit being stopped, the heat will flow to where it shouldn't go and you'll have the "meltdown" the sink was designed to avoid.

This is a comparatively rare problem, and would most likely be caused by the heat sink being asked to take a bigger load than it was designed for, which is probably a fan-related problem to begin with!

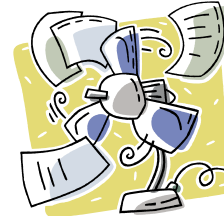


Heat...Without Fire

A much more common problem is fans being rendered ineffective.

Your Fan is Your Computer's Biggest...Fan

There are several ways to keep computer fans in top running condition.



Keeping your fans working well

1. **Do not allow anything to block the venting holes or slots in your computer cases.** Locate them and keep them where they can “blow freely.”
2. **Do not keep computers in dusty environments.** You may have heard that dust can hurt machines, and one of the most efficient ways is by slowing the effectiveness of fans, either by blocking intake or output ventilation, by coating the blades, or by coating the components themselves. Dust acts like an insulator, so a layer of dust on hot switches will make them even hotter.
3. **Replace any fan that clicks, hesitates, or does not come on or run as smoothly “as it used to.”** Today computer cooling fans literally cost only a couple of dollars, and not doing so could cost you your much more expensive machine, or even your priceless data.

Are there different types of fans?

Yes, actually, like any “industrial” part it gets pretty complicated. Fans are classified and rated by physical size, the kind of bearings it has, speed, propeller design, and ‘CFM’ or the cubic feet per minute it is rated to move/cool.

For most purposes, if you have a fan that breaks, just replace it with the same size, model, and ratings.

Help! My Laptop Has the Hots for Me!

A lot of people ask me if a warm laptop is something to worry about.

Almost always, no (other than if it annoys your thighs if you are the rare person who actually uses a laptop on their lap).

The nature of many laptop batteries and their charging systems creates noticeable, but harmless heat — you may find this to be true of your cell phone or MP3 player also. If you're concerned, do some research on your particular computer.

There have been some cases of dangerously overheating laptop batteries, but it's rare.

But if you want to be more comfortable, there are some great new products for cooling laptops. See the *Resources* section for more, and don't forget to visit MarketersProtection.com.



Heat Without Fire

Desktop machines, with all their additional components and much large power supplies, tend to be where the troublesome heat arises.

Keep the fans working!

Even with limited risk of fire and fully functioning fans, you can still create an environment in which more heat than is healthy for your PC can be generated.

Some Like It Hot

But your computers **do not**.

Exercise an extra level of common sense here:

1. **Keep computers away from any external heat sources.** These include heating equipment like radiators, heating registers and space heaters — but also less obvious ones like TVs, microwaves, some refrigerators, large stereo components, musical instrument amplifiers and the like.
2. **Keep computers out of direct sunlight!** Think about what a couple of hours in the summer sun does to your car seats. Ouch — exactly.
3. **If possible keep your PC in an air-conditioned environment.** Some companies get a little crazy with this (you could hang sides of beef in some of the computer server rooms I have seen) but a normal home or office air conditioning system is plenty.
4. **Keep some dusting spray around and use it.** Falcon's *Dust-Off* or any equivalent will do. For about 7 bucks this is a good investment. It has use beyond avoiding heat build up, too, as we'll discuss later.
5. **Make sure your computer's vents — and for laptops also the keyboard area — can "breathe".**

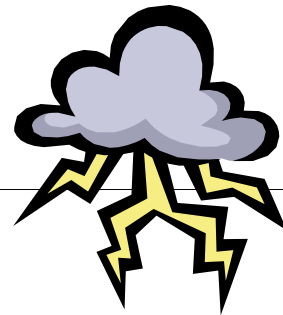
Man, it's getting hot in here.

If your business is so "hot" your fans might need some help with their job, liquid cooling systems and other products are more available, and more affordable then ever.

See the *Resources* section for more.

And just when you thought it was safe keep on working with all those fans spinning happily, here comes a thunderstorm to poop on your parade.

Lightning



Zap!

Lightning can of course cause fires, but this is comparatively rare.

Lightning has a much more direct impact on electronics in the form of what are usually called “surges.”

A “surge” is actually a number of different possible things — let’s get scientific for just a quick second—including voltage surges, also known as over-voltage, and voltage spikes.

Some of you more technical types may point out that actually many so-called “voltage” surges are more precisely energy spikes are measured in Joules not volts, but the result is the same. (It’s useful to think in Joules because the commercial packaging of most higher end units will have a rating in Joules).

Here’s the important point:

Without adequate protection your delicate electronics can get fried in a matter of seconds.

While there are causes of energy spikes other than lightning (for example, a nuclear bomb gives off a hell of an energy spike called an electromagnetic pulse or EMP), the typical day to day concern is lightning. The good news is that protection is simple, reliable and best of all very inexpensive and easy to use.

Surge Suppressors

Basically what a surge suppressor does is creates an extra circuit, with a breaker, between your wall outlet and your equipment

If a power surge or energy spike is enough to potentially harm your equipment, the breaker trips, and your stuff shuts off temporarily instead of getting zapped and very possibly damaged or destroyed.

Like any circuit breaker you then simply reset the circuit — there is usually a switch or button helpfully labeled “reset” — and turn everything back on.

Common questions about surge suppressors:

1. **Are they all the same?** No. There are cheap junky ones and high quality industrial grade ones. Always buy good ones, most of which come with a warranty, as well as lights that indicate not only power but the “health” or status of the circuit breaker itself. There are also different methods of stopping the “surge” — see next page.
 2. **Are power cables the only thing I need to worry about?** No. You should also protect all RJ11 (aka “phone”) lines and all coaxial (aka “cable”) lines from energy spikes also. Most high end surge suppressors include in and out loops for these connections as well. Phone and coax are copper wire based, and copper is an excellent conductor.
-



Kinds of “Surge” Suppressors

The typical surge suppressor is a strip of grounded (three prong) outlets, with a couple of switches and as mentioned, these days often a set of “in” and “out” jacks for phone, Ethernet, and cable lines.

The mechanism in most surge suppressors is a fairly simple — reliable and repeatable — circuit breaker, or a kind of electric switch that simply turns off power in the event of too big a load. A high quality circuit breaker can be reset many times.

If the circuit breaker uses a fuse, or if there is a simple fuse only without an electric circuit breaker, a single event will burn out the fuse and it will need to be replaced. This is usually easy and inexpensive but can be annoying.

Some cheaper surge suppressors use only what is called an MOV which is a form of ground. These are OK but are generally only good for one “surge” and this part is not easily, or advisedly, replaceable.

Stick with high-quality circuit-breaker equipped, warranted and rated UL listed equipment. This is not the place to try to save \$20, \$30, or \$50.

See *Resources* section for much more.

UPS

We don't mean the guys with the brown trucks, but “uninterruptible power supply.”

A few minutes ago when we mentioned how a surge suppressor shuts off electricity instead of overloading your equipment, some of you got very unhappy expressions and started calculating how much money you'd lose if your systems all shut down for say, 15 minutes every time there was a bad thunderstorm in your neighborhood.

Fear not. For those inclined, uninterruptible power supplies are no longer the province of the technically elite and ultra-wealthy. You can buy pretty good ones from any office supply store and use them with or instead of a standalone surge protector/suppressor.

The UPS runs off a battery system. The battery is charged while the electric current is on. Then, due either to a complete power failure to your building or a surge that trips your surge suppressors, the UPS takes over, keeping things running smoothly.

Like a generator for your home or cabin, a UPS will supply a certain amount of juice for a certain amount of time. Needless to say, the more of either, the more expensive the system.

See *Resources* section for much more information on how and where to buy and don't forget to visit MarketersProtection.com.



Stupidity

Duh.

Fire and lightning — and earthquakes and terrorist attacks , which we'll come to shortly — these things are not your fault.

Putting your computer under your desk between the space heater and your cat's litter box, that's just stupid.

Then maybe light a fat stogie and let it burn two inches from your server's air intake.

And don't forget to put an overfull cup of coffee balancing precariously on your wireless keyboard.

Keep wires out of places where you can easily trip on them, or your pet ferret will snack on them.

Little things like that.

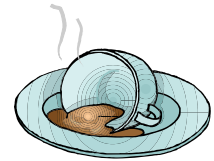
Human folly.

We all do dumb things. All we're saying is, try not to do them around your computer equipment, if you rely on that equipment to make your living. Simple mistakes can cost you thousands in lost time, lost business, and lost data!

The next couple of sections may border on the obvious, but in these trying times, common sense is often anything but.

Speaking of butts...

Food and Drink Can Kill



Just One Oops — That's All It Took

While smoking isn't a very good idea in general, we realize you need to eat and drink, and probably like to do these things while you work.

Mmm...delicious. Hello snack time, bye bye keyboard!

We all spend a of time in front of our computers, and as Internet marketers probably more than most (yeah, you'd rather be golfing, but most of the time you're not, so think this through.)

The main likely and quite possibly catastrophic victim of food and drink if you behave in the normal manner is your keyboard, which is perfectly positioned right under your face and hands, and provides hundreds of convenient places for liquid or little bits of lunch to go and wreak havoc.

Coffee and computers might go "hand in hand" like movies and popcorn, but if you drop a piece of popcorn while watching Steven Segal in "American Asskicker 9" all you'll get is a crunchy sofa. If you spill coffee in your keyboard, your keyboard is very probably toast, and if you're like most of us, you don't have spare keyboards sitting around.

Though actually, you should.

Most serious Web users these days have wireless input devices, that is, mice and keyboards. That's great but presents a unique problem — other than the cost — if you wreck one with your triple double half-cafeinated latte.

The irony is that in order to load the software to install your new wireless keyboard you will need a *working keyboard*.

We find that a nice simple solution to this is keep a plain old serial-port keyboard (retail cost in 2006 about \$12) sitting around someplace, so that if and when you drench your keyboard in Mountain Dew, coffee, or beer, you won't be out of luck, since Windows automatically recognizes plain old keyboards.

That way you can plug in your backup while fixing or replacing your drowned QWERTY buddy.

Laptop users are not so fortunate. Laptop keyboards use a membrane system in most cases, which is somewhat "sealed" (though not *really* sealed) and will be slightly more forgiving of very minor oops moments, but once a laptop keyboard stops working — which usually happens in the form of a single key or two refusing to respond, you have a very annoying and expensive problem on your hands.

I tried typing for a while without an e or r but it just didn't sm to go all that ight fo m.



Food and Drinks Can Kill

The 12-Step Program for your Drunken Keyboard

OK, the keyboard isn't drunk, it's more like slightly soaked, and there aren't really 12 steps, just a couple.

If your keyboard does get wet under the keys, first stop using it because using it will just move the liquid around and possibly put it into deeper places.

Next, and this is obvious but we'll say it anyway, is turn the keyboard over above a couple of paper towels and gently shake it. A good part of the liquid will come out.

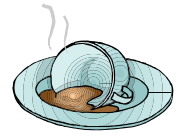
Next, *gently* spray up and down each row of keys with a dusting spray, with the keyboard at a slight angle. A few drops of liquid spray will probably come out.

Then place the keyboard upside down on some dry toweling for about a day and see if it will work.

Generally speaking you can get a keyboard to come back from the brink of death if

- The volume of liquid is fairly small
- The liquid contains very little starch or sugar. For example, black coffee and water are good candidates for recovery. If there is starch or sugar — aka “sticky crap” — in your offending drink you may be out of luck as the gunk may make keys simply stick too much to work.





Other reasons to not eat around your computer

The focus of this book is on keeping your data and machines safe, but we might as take a moment and consider the well-being of you, the intrepid owner of said assets.

You shouldn't eat on or around your computer for it's sake, but probably for your own as well.

Studies repeatedly show that overexposure to a computing environment can result in all sorts of maladies that would be far more alarming than a wet input device:

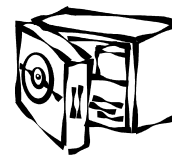
Here are some things you can look forward to if you don't step away from your desk once in a while:

- Carpal tunnel syndrome
- Vision disorders
- Nervous system problems
- Neck problems
- Back problems
- Weight gain
- Deep vein thrombosis
- A bad attitude
- Unpleasant odors
- Misery
- Death

We think you should go and have a coffee, or go and have your lunch upstairs, downstairs, or outside once in a while.

Isn't the freedom to actually eat a sandwich part of why you got into this Internet racket?

Now we return to our regularly-scheduled e-book.



Keeping Your Data Safe

Backing Up Is For Sissies

That's a funny slogan from the latter days of the "insider" era of computing, an in-joke among computer geeks who were trying to assert that being a computer geek doesn't mean you can't be tough.

Being a computer geek — excuse us, Internet entrepreneur — does mean that you shouldn't be stupid however, and not backing up is just plain dumb, especially these days when the tools and technologies to do it are so easy and so cheap.

Hardware and software options

The world of backing up is primarily about storage, and the storage marketplace is moving so quickly it would be a waste of both of our time for us to list out X equipment at Y price.

As a simple example, there is a pocket hard-drive called the Giga Bank. About a year ago, a 2.2 GB Giga Bank — at the time a wonder of miniaturization — cost about \$150. Today a 4 GB Giga Bank is around \$89. By the time you read this, they'll have the next one out.

It's probably more useful to talk about general ways and means of backing up (or if you prefer, replicating or archiving data). Archiving is not the same as backing up, but you may find doing some of both useful.

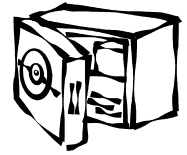
We'll discuss a couple of general concepts about having multiple sets of data, and a little about the hardware and software options for creating and accessing them.

Backing up versus archiving

Backing up means keeping copies of stuff you currently need or use in a second or third place, so if the one you have on hand gets destroyed, you have another one. You want backups pretty easily accessible at all times.

Archiving on the other hand usually means removing data files from a high-traffic place (like your C drive) and putting it somewhere in storage, in case you ever need to look at it again, which you may well not but you want to have the stuff safely stored in case.

Accordingly, backing up is something you do routinely — probably weekly or more, or even several times a day if you have high-volume transaction heavy businesses. Whereas archiving you only do once in a while, like you might do each year, if you do projects on an annual basis. You might not need your 2004 projects on your desktop in 2007, but you might need them tucked away someplace.



Your Platform Options — HD to HD

Let's consider total system backups first. In the old days, you would back up from your hard disk, which was probably about 10 MB, to a floppy disk, which could have been as much as 1.44 MB. You could back up a whole HD to a handful of floppies in about a half hour, just label the floppies, and go on your way. Then came ZIP drives, with (for the time) huge capacities of 100 MB or more.

With today's 80 GB or bigger drives, it's not that simple.

To back up an active hard drive the easiest method is to have another hard drive of a similar or greater capacity connected to the same computer. You can use software to manage this (too many programs to list and the hard drives actually sold as backup options will often include something) or you can just drag and drop like you move or copy any files. If you have a lot of data and not much of it changes often, using some kind of backup software will save you aggravation because Windows will want to copy the same files over themselves, every time. This takes forever! And is usually not necessary. On the other hand, if you generally work in files that are unique, you may be able to say no to the Windows system question "do you want to replace files with the same name."

Either way, make sure you select a real brand, and use the fastest connection available on your machine. For most of us this is USB 2.0. Get the fastest hard drive disk speed your budget (or favorite manufacturer) allows — 7200 will be pleasant, as of this writing.

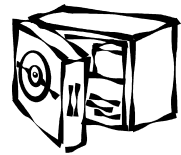
Hard drives come in all shapes and sizes these days, but here we are focused on comprehensive backups and archiving.

A terrific option for backing up a laptop is something like the Western Digital Passport line, which has several knockoffs also, including excellent models from Fantom. See the *Resources* section for more.

Currently anywhere from \$99 to \$299 and frequently available at deep discount merchandisers like Costco, these great units run directly on USB power, are fast and quiet and have rubber coated enclosures. We have a 40 GB Travel mate laptop and find an 80 GB Passport an excellent companion for both backup and archiving.

One important note. Partitions on the same drive are OK for multiple file copies but are totally useless in the event of a hard drive crash. In other words, if you have C and D partitions, putting copies of your files from C on D makes sense if the only concern you have is corrupted files.

For example, if your mail software is on C and a virus were to mess up the C drive files, you would have a clean backup on your D drive. But bear in mind these partitions are like putting up a thin wall in one room. They reside on the same physical disk, so while *software problems* can be recovered this way, a *hardware failure* will destroy both "drives."



Back It On Up...

Your Platform Options — CD/DVD discs

For portability, archiving, and in some situations backups, CD or DVD discs can be useful. The drives are ubiquitous, the media cheap and easy to deal with.

Bear in mind however that the media are also more fragile than some people think and they do somewhat degrade over time.

We're all for saving dough but don't be penny wise and pound foolish here: When using CD or DVD disks for backup or storage, *do not go cheap*.

Go with a major brand you know ([TDK](#), [Maxell](#), other well-known media companies) and if you can afford it, go for discs that are packaged as gold, archival, or similar. Unlike a lot of marketing scams (premium gas, anyone?) the differences between junky digital media and high-end stuff is very real.

Cheap CDs will often not read or write properly, they are more sensitive to scratches, heat, and dust, they use inferior metals for the data surface and inferior plastics for the disc itself.

When the difference between junk that will have you tearing your hair out and the best stuff you can get is about 40 cents a disc for crap or 75 cents to a buck a disc for good stuff...forget the percentages and get the better discs.

Discs are good for storing data but not so good for keeping prying eyes away from it.

Your Security Options — Beyond Passwords

Passwords are OK but if you want real protection, you want biometrics. Surprisingly, this is now no more expensive than a dinner in most cities. See *Resources* section for more.

Your Security/Platform Options — Remote storage

For extremely important files that you may need to access from anywhere at anytime, there are a number of ways to utilize the Internet for storage. You might even want to keep some things *only* online.

A "quick and dirty" solution is to open one or several free email accounts and email important things to yourself. This is easy and cheap but you will usually be limited to 1–2 GB of storage. That's a whole lot of Word docs but only a few minutes of high-def video, so consider what you need to store.

[X Drive](#) has several programs but the basic service is 5GB of storage for \$10 per month. They also have a free trial of the 5GB option. (Try and get a free trial on any hardware system).





Earthquake!

For those on the West Coast, earthquakes are not as outlandish a possibility as they may sound.

There have been 23 significant (about magnitude 6) earthquakes in California since 1933, and dozens of smaller ones.

Tremors happen with some regularity along California fault lines and shaking your office building around is not only scary it can damage your equipment, your data and your business even if nobody gets hurt.

In other places, there may be a very large person in your office that likes to stomp around (remember the Refrigerator Perry ads?). If so, or if you are surrounded by a klutz of any size, you may want to do some of the same things.

Some of this is going to sound obvious but think it through. What are hazards when a room is shaking might be harmless or even helpful under other conditions.

There is very little that can be done to truly prevent the possibility of damage in an earthquake (other than obviously, off-site or online storage) but those in earthquake prone areas should take some precautions others might not need to worry about so much.

- Don't store any equipment high up without securing it. And ideally being certain whatever it is on is also secured! A bookshelf or wireframe that is not moving is one thing, but as soon as it is being shaken, things can fall more easily than you'd think.
- Don't store any equipment or data repositories (like your shoebox of Zip discs) *beneath* anything that could easily fall either. Even if your stuff doesn't move, a wall unit collapsing carries a lot of force, and even good data recovery people can't do much with a box that looks like Godzilla stomped on it.
- Don't store equipment right near waterlines if it can be avoided. It's not that common but waterlines do break in a shake, and if they do, you don't want your systems drowned instantly.
- Consider paying more for "shock proof" enclosures. They aren't really shock proof anymore than a pack of Marlboros is "crush proof" but it does give you some modicum of extra protection if you expect your equipment to get jostled around, just like a "sport" watch can typically take more abuse than a "dress" watch or a Jeep has a different suspension than a sedan. The read/write head on your hard drives bouncing around probably won't "destroy" the unit but could easily mess up data much in the same way grabbing a needle off a phonograph can leave a scratch,



Unwelcome Visitors

And we don't mean your in-laws.

Remember that science class gross-out moment when you learned that there are little critters living all over your body, in your eyelashes and stuff?

Well they don't bother you. It takes a bigger creature or one with a nasty agenda to really make life unpleasant.

Your computer, while it is not a living thing, would probably feel the same way if it were.

Your computer is a somewhat sensitive collection of electronics and electro-mechanical devices, and as we've already discussed, relatively minor disruptions — and big ones — can be equally disastrous.

We already told you not to eat around your computer. Another reason not to eat around your computer is the little friends who will show up to eat whatever you didn't...bugs.

Bugs can actually get inside a computer case. Flying bugs, walking bugs, crawling bugs.

Keep your computer environment bug-free.

- Don't eat by the computer and if you must, clean up and don't leave food around
- Don't drink by the computer and if you must, clean up, especially sugary stuff
- Don't have open windows near a computer without good screens
- Don't keep computer equipment in musty, damp, or moldy environments (you laugh, but we've seen some scary semi-finished basements)

If you have an infestation problem in a room with computers in it and you feel the need to use a product like bug spray, either remove your equipment or completely cover it in plastic and turn everything off before spraying.

RAID and all of its ilk are sticky, icky chemicals that will probably hurt your machine more than a few kamikaze ants would.

Don't bug your computer and it won't bug you.



Keep It Clean

Cleanliness is next to Godliness, remember?

OK, maybe you're an atheist.

In which case cleanliness is better than broke-down -computerness.

You need to clean your computer, but you need to do it intelligently or the cleaning process will do more damage than the gunk and dust you're cleaning off.

Here's a basic list of what you need to have around:

- Cleaning cloths — lint-free and ideally static free, you can get these cheap at any office supply place
- Water — distilled if you want to be anal but any old water will do
- Alcohol — rubbing alcohol. You can but usually should not use other solvents, which can damage plastics and dyes (we rubbed the letters right off a keyboard in about 1987 and had a hard lesson in just how poor our touch-typing skills are)
- Portable mini vacuum designed for cleaning electronics — around \$20 for a simple one, don't use a home vacuum as there is too much air pressure and also potentially dangerous static
- Cotton swabs OR BETTER YET
- Foam swabs — lint and static free
- CD-ROM cleaning disc
- Windex

For monitors and screens you may want to invest in cleaner designed for that purpose, which may work better than plain alcohol, but alcohol when used as below will not hurt them.

How often to clean?

If you are following our other advice, and keeping pets, smoke, food and general mayhem away from your equipment, a cleaning about twice a year should do fine. If you have environmental contaminants like smoke or pets, or a lot of dust, probably quarterly would be wise.

In any case this is not a weekly kind of routine, so don't get stressed.

What to clean?

You want to clean up every element of the system that will tend to get dirty enough to pose a potential problem. This includes: Cases, drives, input devices, LCD screens, monitors, the internal components of the computer including the fan and boards.

Ready?



Keep It Clean

Rules of cleaning computer stuff

Never spray anything directly on anything. Put any liquid (water, alcohol, Windex, whatever) on a cloth, wipe or swab before applying it. Avoid solvents.

Clean the case

Wipe down all surfaces with a slightly damp (water) lint-free cloth. You should avoid using any solvents including alcohol on plastics if you can. If you have really stubborn stains adding a SMALL amount of dish detergent can help, and won't hurt the case. Vacuum at all open areas and around the fan.

Clean the drives

For CD and DVD drives, just run the CD-ROM cleaner. This is disc with tiny brushes that will clean the lenses and in some cases motors as well.

For floppy drives (if you have any!) you can buy an inexpensive kit for the purpose. If you don't want the kit you need to open up the drive and clean the heads, much like you would on an old cassette deck, but we're not recommending that!

Clean the (desktop) keyboard and mouse

Here too you can wipe down all surfaces with a slightly damp (water) lint-free cloth. You should avoid using any solvents including alcohol on plastics if you can. Next use compressed air and blast gently along each row of keys. You may be surprised how much dust and hair flies out. You can vacuum a keyboard, but make sure to use a nozzle attachment small enough not to suck any of your keys

For an optical mouse just wipe off the finger smudges with a damp cloth. For a ball or trackball mouse, open the case (this is usually a quarter turn of a disc) and remove the ball. Use a cotton or foam swab dipped in alcohol to clean the crud off the internal rollers.

Clean the screen (s)

A glass CRT monitor can be cleaned with a little Windex or alcohol, like any glass surface.

An LCD screen can be safely cleaned with a small amount of alcohol, but not any other solvent. While there are "screen cleaners" available and they work well, some adding anti-static properties, LCD screens are actually cleaned with alcohol by the computer companies who then tell you not to use alcohol to clean them. If you're worried, you can use a very slightly water-dampened cloth.



Resources and Recommendations

Now that we've covered a lot of ground in terms of what you should be thinking about doing with your systems to keep them safe from threats large and small, let's get practical and tactical and spend the next bunch of pages taking a much closer look at some of the equipment and services you might want to look into.

General reseller/retailer recommendations

Almost everything we talk about here (except specialized services like [X Drive](#)) can be purchased from any well-stocked computer equipment store.

You can certainly go to CompUSA, Best Buy, or any of the other big box retailers. Some Radio Shack stores are nicely stocked and the prices are reasonable.

But for computer equipment in general we strongly endorse two "open secret" stores, where all of our serious techie programmer type friends have gone for years.

These are [Tiger Direct](#) and [CDW](#).

Tiger is located in Miami. They have huge selections and often, ridiculously low prices. They carry everything from high end gaming systems to bare bones boxes, and everything in between. They recently started selling DVDs at a discount also. Tiger tends to be more of an "insider" place to shop than CDW., and caters to small businesses and individuals mainly.

Chicago-based CDW has been around since 1984 but recently started raising its profile. You may have seen their ads on big news and search sites. They now move about \$6 billion in material per year.

We tend to like Tiger for "stuff" and CDW for systems. Visit both and see what you think.

General brand recommendations

We like saving money as much as anyone, but we also think there are places (like CD discs for storing business information) where paying a little more now is worth it later.

You'll find in each category there is a brand leader, for example, in power management it's APC. Is APC worth the extra money? In general, we think so, because the extra money isn't much extra and you get a lot more real value. On the other hand, is CyberPower a good bet? Absolutely. If they offer a product that meets your needs, and perhaps is on sale, you won't go wrong.

When it comes to things like cleaning solutions, like bottled waters, it's mostly marketing. Plain old rubbing alcohol is a perfectly good solvent for most situations — but if the new-age anti-static whose-a-what-sit spray makes you feel like you are taking better care of your screens, go for it...

Let's take a look at a few major product areas, and get pretty specific about what you might want to actually buy.



Power-Related Products — UPS

Know your APCs

As previously mentioned, the king of the heap in power products is APC — [American Power Conversion](#). Once premium priced across their lines, APC have delivered a huge variety of options that can meet the power needs of almost any individual or business.

Based in Rhode Island, these guys have been around since 1981 and more or less created the UPS business. APC stuff is available at both Tiger and CDW as well as hundreds of other retailers like Staples, Office Max and Wal-mart. Almost all APC products come with a \$50,000 to \$150,000 equipment protection warranty, which helps make up the premium price in our opinion. (Note that these warranties never protect data)

CyberPower, SmartPro, and ULTRA are among the quality competition for APC, though not every company makes every kind of unit. What kinds of units do you need and what do they cost?

Power is nothing, without power

The most important things to understand when buying an “uninterruptible” power supply are

- What exactly you need the unit to do
- How often you probably need it to do it

The main *categorical* difference among units is their wattage. Generally speaking 700 Volt Amp units and smaller are viewed as one group, and 700VA and higher as another. Roughly speaking this is “desktop” units and “network” units although wattage needs vary. *Bear in mind that most stand-alone UPS solutions are intended to allow you to backup your system and shut down safely, not keep running any great length of time* (which would require a generator). Think of them somewhat like a donut spare.

Desktop examples

For example, desktop UPS systems were once rare and expensive but are now common and relatively cheap. These units typically include a world-class surge protector so that is a piece of equipment you will not need to also purchase, depending on how many outlets you need. For example: If you need to keep a desktop going in the event of a short-term power failure, you need to decide, for example, if you want to safely shut the computer down, or actually keep it up and running off the emergency batteries.

The APC Back-UPS line designed for a single desktop ranges in price from about \$39 to about \$199 as of this writing.

For \$39 (Model Back-UPS ES 350) you get about 50 minutes of runtime with three battery-powered outlets, three additional surge-protected outlets, 200/350 watts/VA and a \$50k equipment insurance policy. Each of the price points up to \$199 (Back-UPS RS 1500) gets you more outlets, more peak wattage, longer runtimes to 110 minutes, and more insurance.



This is the APC Back-UPS CS 350VA.

It's a typical high-quality backup power system for a business desktop computer, with 210 watts and 350 Volt Amps.

It can power your equipment for about 55 minutes.

Price: About \$69



This is the CyberPower CPS 425SL..

It's another quality backup power system for a single desktop, offering similar wattage to the APC unit above but only 22 minutes of possible runtime, so it's about half the price.

Price: About \$35



This is the APC Smart-UPS XL 3000VA.

It's a typical rack-mounted large network backup unit, offering a very heavy duty 3000VA rating with 2400 watts and many exceptional power management features.

Price: About \$1300



This is the CyberPower PR 2200.

It's another quality backup power system for a business server environment, but offers six outlets, 1500 watts, and generally fewer power management features than the APC rack unit above. Then again, it is also about a third of the price.

Price: About \$400





Power-Related Products—Suppressors Et Cetera

Know your needs

If you are buying a UPS for all of your core equipment, you almost certainly do not need to buy suppressor equipment additionally. All UPS units are suppressors and some even have dedicated outlets for extra equipment that goes beyond the UPS power supply capacity.

If you don't have a UPS or you have only some equipment connected to it, you want all your equipment plugged into suppressors, including RJ11 phone type plugs, cable and coaxial lines, and Ethernet cables. Any outside line that can carry a charge can fry your expensive stuff in a lightning strike and protection is so cheap it's truly foolish not to have it.

Protect the family Joules

The most important thing to understand when buying surge suppressors is “how much of a jolt can the thing take” and that is a rating expressed in Joules. As a rule, the higher the rating, the better off you will be. Joules ratings run from a few hundred up to about 3400 or even more.

Since the top rating will cost under \$50 for even the best brand, get the best.

As discussed previously, this is not a place to cut corners. Saving 10 bucks on a cheaper switch can cost thousands or more in damaged equipment.

- Buy the highest Joules rating your budget allows
- Buy high-quality name-brand stuff like the examples on the next page

Who do we like?

While most power supply and UPS makers make stand-alone surge protection products, so do a lot of other people.

In addition to APC and its competitors, we also like Belkin (available everywhere in the free world) and Power Sentry (available at Tiger and at stores like Costco and Sam's).

Tripp Lite is among the “gold standard” professional grade manufacturers — nice quality but expect to pay for it.

Surge protection products are made by many lighting and supply companies, and can range in price from literally a few dollars to literally hundreds, as the examples to the right (which we like all of, for different situations) amply attest.



This is the APC Network Surge Arrest.

It's a typical high-quality surge protection floor unit with eight power receptacles (including three oversized "wall wart" ones) plus lines in and out for data lines. This comes with a \$100,000 equipment policy.

Price: About \$35



This is the Belkin Surgemaster Gold 10.

It's another quality unit with more jacks, a similar joules rating of 3450 and an unlimited connected equipment warranty policy.

Price: About \$35



This is the Power Sentry Power Squid.

We don't know why someone didn't think of this sooner. Designed like a multi-line extension cord, this unit includes a 15 amp circuit breaker and the cords come in 6- 8- and 10-inch lengths. Originally designed for contractor/power tool use, we think it's great for many electronics too.

Price: About \$15

This is the Tripp Lite ISO Bar or "HT Power Bar 10".

This is an extremely high-end product designed to protect A/V and home theater equipment, which is frequently more expensive and sometimes more sensitive than computers. It offers 5700 Joules protection and comes with an extensive accessory kit.

Price: About \$125





Backup Related Products

More choices than we can cover

As previously mentioned, the options for and pricing of storage and security options is so vast and fast moving, a lot of it would be inaccurate between the time we print this and you read it.

Having said, we do want to provide some examples that will give you a ballpark idea of the kinds of options and general pricing that's available.

Big, little, fixed, portable, virtual – and manageable

On the next page are some illustrative examples of a large NAS box ("Network Attached Storage") for the small to midsize business market, a small USB backup drive that may work perfectly for a typical small office/home office, a device that allows custom configuration of multiple network drives, and a high capacity "pocket" drive that can be carried in a briefcase.

Who do we like?

All the major hard-drive manufacturers offer fixed, removable and portable storage, and there are many specialty companies like Buffalo as well.

Almost any well-known brand of drives will be reliable. We recommend purchasing only from authorized resellers (not for example on eBay) in case you do need warranty service.



This is the Buffalo TeraStation Pro 2.0.

This is a very high-end, very large capacity network backup unit. Featuring a four-drive RAID array, this is geared towards both backup and server applications for data-intensive small to medium businesses.

Price: About \$2000



This is the Tritton Technologies TRI NSS 160.

This is a much smaller single drive version of what the above unit is for a midsize business. This is appropriate for a home or small office application and can easily be used to back up one or two typical PCs.

Price: About \$200



This is the LinkSys NSLU2.

This contains no storage but is a brilliant device that allows you to connect several USB 2.0 drives directly to your Ethernet network to create a custom backup and server solution. This turns any USB drives into network drives.

Price: About \$85



This is the Fantom Drives Titanium Mini 80.

It's an 80 GB USB drive that can be carried in a jacket or computer bag easily, with fast access times and a shock resistant case. Western Digital's Passport line is similar, and slightly more expensive.

Price: About \$100





Heat/Cooling Related Products

Keep your cool

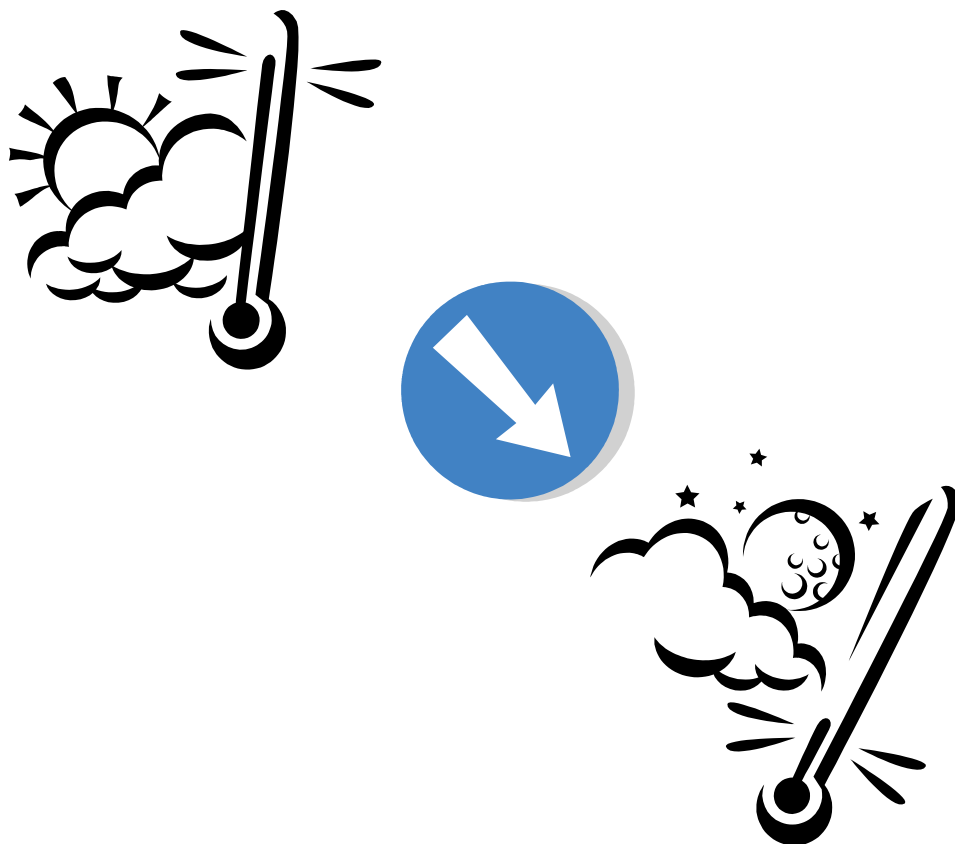
In case your fans are not really doing an adequate job, there are several ways to help them out. The most popular units for office environments are liquid cooling systems, which work by adding a medium that draws heat faster than a fan alone can blow it.

Hard drives generate a lot of heat — especially as spindle speeds have gotten faster. Very few products exist to focus on this but the ones that do are simple and work well.

Laptops can get very warm too. While this is usually not a problem for the machine, it may be a problem for you, as we have seen some laptops that got so hot they were uncomfortable to type on.

Laptop cooling systems a few years ago were bulky and relatively expensive. Both of those have changed, and there is a great system that requires no extra power supply for about 15-20 dollars.

Finally, if you want something a little fancier — that brings additional USB outlets to boost — the Notepal might work for your notebook, pal!





This is the Kingwin Aquastar.

It's a typical high-quality liquid cooling unit, that dramatically reduces CPU heat versus a standard air-moving fan. It's a little tricky to install, but if your computer runs hot, it could be worth the effort.

Price: About \$110



This is the AOC dual Hard Drive Cooler.

This is simple idea that accomplishes something great — whereas fans and liquid units are focused on processor heat, this — for under ten bucks — keeps your hard drives running cool too.

Price: About \$10



This is the Kinamax Notebook Cooler.

USB powered and lightweight, this is a great inexpensive solution for the laptop that has the hots for you.

Price: About \$15



This is the Cooler Master Notepal.

It's another quality laptop cooling unit, but in addition to the fans it offers extra USB jacks and an angled work surface. It's aluminum and like the Kinamax is USB powered.

Price: About \$35





Various Other PC Protection Products

Biometrics

This technology is no longer expensive, complex to use, or for the exclusive enjoyment of large companies and the government.. Passwords can be broken but it is almost impossible for a typical person to fake a biometric identity (and if you're in a business where that's likely you probably know much more about this sort of thing already!).

On the next page are two inexpensive, highly functional biometrics devices. One can be used to protect a system, the other is a self-contained storage unit.

These are just two examples of the options available for this cutting-edge technology.

Shock Proof Drives

Many options exist for nearly shock proof drives — but expect to pay a lot, about double, for similar capacities in a “regular” and a shock proof unit.

Bolt it down

With all the various potential disasters we've discussed, it is worth mentioning one of the simplest and most costly of all — some nefarious individual making off with your stuff!

There are many ways to protect equipment, but one of the cheapest and oldest often remains one of the best. Stalwart accessory maker Kensington invented the “micro-saver” system about 20 years ago, and it remains useful, and inexpensive, today.



This is the APC Biometric BIOPOD device

This allows you to control access to systems or data by requiring fingerprint verification, which, this side of the newest Mission Impossible movie, is virtually impossible to defeat. This technology is not just for the FBI anymore.

Price: About \$50



This is the Sandisk Cruzer Profile Biometric Jump Drive

If protecting your whole system with biometrics is too much, you can buy a wide variety of portable storage devices that require fingerprint identification to function.

Price: About \$60



This is the Plextor PX-SP12U-NA Shock Proof Drive

This drive is encased in silicon and is made of a special aluminum designed to withstand serious abuse. If you need it, it costs about twice what a similar capacity not shockproof unit costs.

Price: About \$250



This is the Kensington Microsaver System

Simple but effective, this system cables all of your expensive equipment together, and to a fixed object like a desk, making it very unlikely someone will walk off with your machines. Similar kits exist for laptops, etc. The system resists 750 pounds of force.

Price: About \$25



Lunch, Lightning, and Lurking Dangers

While there are plenty of dangers out there — terrorists, the competition, your ex girl-friends — for online marketers many of the biggest threats to your livelihood, data, and equipment are simple things like lunch and lightning, and a few simple steps can help you prevent damage from both, and much more.

Combining common sense and a comprehensive review of the potentially confusing products out there, The Online Marketer's PC Protection Guide is all you need, to take the steps necessary to your equipment and your online business running safely and smoothly.

The Online Marketer's PC Protection Guide

