Boot Camp-Troubleshooting Hardware Bootup Problems

This guide deals with troubleshooting a PC that won't boot to the point where it at least starts loading an operating system (hardware related problem). This article is intended for a person who has a little knowledge of PC's and is comfortable opening up and working inside a PC. If this isn't you, then I recommend taking your PC to a qualified PC repair shop. This is meant as a general troubleshooting guide and by no means covers every scenario that can occur, any omissions or mistakes were not intentional and will be updated as necessary.

Now let's get started..

Keep it Simple

First and foremost, I cannot stress enough that when it comes to troubleshooting PC's, KEEP IT SIMPLE! You will save yourself a lot of time and effort if you start looking for the simplest and most obvious solutions first.

With that being said here is a list of a few things you should start checking first..

1. Check the Power Cable

(reason: ensure the PC is getting power and that the problem isn't simply a bad power cable)

    a. Is it plugged into the back of the PC tightly?
    b. Is it plugged into a power source?
    c. If it is connected to a power bar --- is the power bar plugged in and turned on?
    d. If possible try a different power cord and/or power bar
    e. Is a breaker blown in the building? Try a different wall plug

2. Check the monitor

(reason: make sure the monitor is still working. When you boot a PC you expect to see something on the monitor, if you don't, one may think their PC isn't working when in fact there is something wrong with the monitor)

    a. Is the power cable plugged in tight to the back of the monitor?
    b. Is the power cable plugged into a power source?
    c. If it is connected to a power bar --- is the power bar plugged in and turned on?
    d. Is the monitor turned on?
    e. Is the monitor's video cable plugged tightly into the video card on the PC?
    f. Are the contract and brightness settings of the monitor adjusted correctly?
    g. If possible try a different monitor.

3. Visually check the power supply

(reason: a PC may boot to a point with a failing power supply but can quickly overheat causing it to the PC to stop functioning)

    a. Does the fan turn when the PC is turned on?
    b. Does it feel hot to the touch?
    c. Do any lights come on when the PC power button is pressed?

4. Check the keyboard

(reason: a PC needs a keyboard to boot, most times if there is a keyboard problem a message will be displayed on the screen, however this may not always be the case and the computer may just stop booting)

a. Is the keyboard connected to the PC?

b. If possible try a different keyboard.

5. Check the floppy and CD drive

(reason: when a PC boots, by default it will try and boot from the floppy or CD drive first. If there is a disk in either of these drives even if it is not a bootable disk, the PC may try to boot from the disk. Most times an error is displayed when it can't boot from the disk but this isn't always the case)

a. Is there a disk in the floppy drive?

b. Is there a disk in the CD drive?

A person may think that it is a waste of time to check such simple things and want to skip the above checklist. I cannot count how many times I have been called to troubleshoot a PC only to find that a power bar was turned off or there was a disk in the floppy or CD drive. Take the time now to check the easy things--- I guarantee you it will save a lot of headaches and frustrations.

Advanced Troubleshooting

When a computer is first turned on, the hardware runs a Power-On Self Test (POST). If errors are encountered during this POST test, they are usually indicated by a beep or in the form of a code displayed on the screen. With this error code you can determine what part of the system is having problems and find a solution. You have probably heard a beep code in the past and just not realized it. You know the one or two short beeps your computer makes when you first turn it on, that is a beep code indicating everything checks out OK. With some PC's it may seem like there isn't any beep code, what is probably happening here is there is a problem with the internal speaker inside the PC, it is either not present, not functioning any longer or not connected properly to the motherboard. If this is the case in your instance, check to see a visual code is being displayed on the monitor, if nothing then skip ahead to the next section.

To check for an error code on your PC, turn the computer on and listen for any beeps or look on the monitor screen for a code. As I mentioned, one or two short beeps indicates everything is OK, if you experience any different sequence or length of beeps, write down what you heard, (e.g. 1 long beep followed by two short beeps) or write down the error code on the screen. Error codes vary from PC to PC depending on the manufacturer of the motherboard inside the PC. It would be beyond the scope of this guide to include every manufacturer error codes as some may be missed and some may change as new technology is introduced. Performing a search on the Internet using your favorite search engine will find many sites specific to your PC. They will have a list of codes, what they mean and potentially how to fix them, look for the code you wrote down previously. The hardware generally checked by the POST test is the motherboard, CPU, power supply, memory and video card. If the error c!

ode indicates a problem in one of these areas, make sure all cards in the PC are seated correctly in the motherboard slots and that the power supply cables are connected snuggly to the motherboard. If all of this has been done and you still receive an error code then chances are the device has failed and will need to be replaced.

If the POST test doesn't reveal the source of the problem the next step is to open up the PC.

Staying with the theme of keeping it simple we will want to try and start the PC with the minimum hardware required to boot a computer. All you need to boot a PC is the motherboard, memory, some sort of media (floppy disk, hard disk, CD, etc.) and a video card. What we will want to do is remove or disconnect any unnecessary hardware.

1. Leave one form of media drive connected to boot with, preferably the floppy drive if available, and disconnect all other drives.

2. Remove all cards except for the video card.

3. Remove all memory except for one stick

4. Insert bootable media (floppy disk, CD, etc.) and power on the PC

If the PC doesn't boot with the minimum hardware then the problem may lie with the video card, memory or the motherboard. Try using a different stick of memory if you have one as well try using a different video card. Friends

and family can be great sources for this, ask to borrow their video card or memory from their PC, just make sure to return it when you are done. If swapping the memory and video card don't work then you more than likely have a problem with the motherboard and it will need to be replaced.

If it does boot.

1. Turn it off
2. Insert or connect one hardware device that was previously removed
3. Try booting again.
4. Repeat these steps until the computer no longer boots.

Once the PC doesn't boot again the last hardware device that was connected is the problem and should be replaced or permanently removed.

If you get to this point and your PC still doesn't want to load an operating system then it is time to have a qualified computer technician look at the problem or purcahse a new PC. You gave it your best shot but sometimes a fresh set of eyes can see something that may have been missed.

Short note about the author

Keith Park has been in the IT industry for the last 7 years and is the author of the website TechCorner PC Resource Zone. For more articles and resources go to http://www.techcorner.ca/computers

Also check out http://mgrcentral.com/computers/default.aspx?studentid=1575219 for even more computer resources.