

Care and cleaning of PC's

This month I am going to cover the physical care and cleaning of personal computers (PC's): desktops, workstations, servers, and laptops. Even when we have taken the time to do proper computer maintenance: downloading Microsoft updates, keeping anti-virus and spyware up-to-date, and performing regular disk cleanup, there is another element that has to be taken into account: the physical environment. Think about the 'desktop' PC for a minute, most of the time it is actually stored under the desk, in a closed armoire or cabinet, or in an out-of-the-way place on a counter. These are not areas that have great ventilation nor are they thoroughly cleaned very often. The under-the-desk computer, whether server or just workstation, probably takes the brunt of all abuse because it gets a great deal of dust buildup as well as potential bumping of feet or chair legs. Both of these things can do serious damage to any computer.

Dust buildup has to be the biggest non-hardware or software problem we see. All computers have multiple fans (at least two) embedded in them to keep their internal components cool while operating. If you put your hand over the back of your tower you can probably feel the air coming out any time the PC is powered on. If that fan is blocked with dust buildup, the PC will overheat and shut itself down. I have a customer in Charleston who was experiencing mysterious shutdowns of their main server (the one that has the practice management database and EMR database on it) several times a day; after extensive error message troubleshooting I asked him to describe the issue in more detail. He indicated that the server would just power off and then power itself right back on. I asked him where the server was located and sure enough it was under a desk, then I had him check and remove any dust from the visible fan and the problem has since disappeared.

Accidental bumping of the computer tower is another common problem, but does not manifest itself quite as visibly. It tends to lead more to hard drive failure instead of an overheating issue. This happens because today's sealed hard drives are incredibly thin magnetic disks of highly polished aluminum or glass. The disks spin anywhere from 5400RPM to 15,000RPM (if you look at new system, you will see the RPM speed of the disk listed in the specifications) and a tiny arm with a read/write head moves back and forth across the disk to access information. Within every enclosed hard disk case there is also a small motor to spin the disks and move the arm as well as a vent fan. This is a very delicate configuration and every bump of the chair, foot, or vacuum can lead to a failure in this tiny microcosm.

While we are crawling around under the desk, let's go over strained and loose connections as well. As you know there are a myriad of cables connected to your computer's tower, and sometimes these cables are just barely long enough to reach their target, whether it is a printer, USB hub, or network connection. This can easily lead to an incomplete connection where all the tiny pins at each end of the plugs are not making contact, and that means it is considered not connected. I have another customer who called because she could not print to a particular printer all of the sudden. I reached behind the tower under the desk and wiggled all the plugs in the back of the computer's tower and then asked her to show me how she normally prints. She hit the appropriate keystrokes and voila, it was printing away. I wish all my support calls were fixed so easily.

I guess the lesson to be learned here is that even though your computer case is a large metal, seeming solid, object it actually is pretty fragile and should be treated with care. Another point I want to mention is that all those cans of compressed air you can get at Staples and Office Depot are never to be used when cleaning any aspects of electronics. All they end up doing is pushing the dust further onto the components you were trying to get it off of. A better

way to clean is to use some rubbing alcohol instead of water and a soft wipe (rubbing alcohol because it evaporates fairly quickly).