

Basic Hardware Maintenance and Procedures for Service Calls to Information Technology

Although manufacturers try to make their products as fool proof and maintenance free as possible, we still must take certain preventive measures to keep them running in top condition for the longest time. If you follow these steps, you will find yourself having fewer problems and the problems that you do have are easier to diagnose and repair. Most are simple, common sense steps. Some take some effort and planning. However, the payoff will be greater ease of use and less frustration for you.

Some of the most common problems suffered by users are file storage related. Most of us have little or no backup plan or if the files are backed up, it is to a floppy disk. Here are some of the most common problems and ways to avoid them.

1. **Store documents to your hard drive, not to floppy disks.** If your data is very critical for your course work or to your department, **do not use floppy disks** as the main storage media. Floppy disks are of dubious quality as a long-term storage media. One floppy from a box might be good, the next bad. If you must use floppy disks to carry data or store data on, run scan disk and defrag often (as often as every save) and keep a backup copy on the hard drive or other media.
2. **Schedule system and data backups.** If you have a tape backup, Zip drive or CD burner; schedule a backup at least on a weekly basis. If you have enough tapes or other removable media available, a daily backup (differential backup) is best, as this will make sure that all data that is changed has been backed up. Tape drives are more difficult to restore from than memory sticks or even recordable CD's, so choose the media that you are going to be most comfortable with and will give you the best protection.
3. **Do not move your computer while it is on.** While hard drives are fairly robust and trouble free, they do need some maintenance and some protection to maintain file integrity. Moving your computer while it is in operation may cause head crashes, where the wire thin head strikes the platter spinning at up to 7200 rpm and scratches are dug into the recordable media on the metal platter. In most instances, there is data loss and sometimes, or eventually, hard drive failure with unrecoverable data loss. This is one of the surest ways to lose all data on your computer. Sending off a hard drive for data recovery is very expensive, sometimes \$5000.00 or more and there is no guarantee that the data can be recovered. CD's can be scratched too, and a scratched CD is often good only as a coaster.

4. **Schedule regular defragmentation and disk scanning.** These two items alone can often mean the difference between lost data and trouble free usage. Below is a screen shot of the menu available when you right click on a drive and choose the **properties** option. As you can see, this drive has not been defragmented nor has it had scan disk run for some time. You should run scan disk at least once a month, using the thorough setting. This may take some time, depending on the size of the hard drive. You might want to schedule this to be done overnight. Running disk defragmentation should be done at least every two weeks, more often if you are saving large amounts of data. Even if the program says that the drive is not fragmented, go ahead and run defrag. This will keep all of the data for each program in contiguous clusters, resulting in faster access times, less wear on the hard drive and less chance for data loss. Both of these programs can be scheduled to run at preset times and on preset days with Windows 98. [Additional info...](#); [Why?](#) ; [Defrag operations](#)
5. **Keep all magnets away from disks.** Except for CD's, all data media is magnetic. Small refrigerator magnets, phone handsets, unshielded speakers, etc. will erase data. Even paper clips or tools can be magnetic. Data lost to magnets is lost forever, so watch what you lay on floppy disks or tapes.
6. **Do not plug in or unplug peripheral items while the computer is running.** Do not unplug the computer while it is on. If you do, it may be the last time you see your data.

Other things can affect the performance of your computer or even lead to the eventual death of the system. Some of these you can control, some tend to be the whim of nature. Following these suggestions will help to prevent system failure.

7. **Heat can kill.** This applies to computers just as well as it does to human. Keep your room close to 78 degrees if possible. This is a comfortable temperature for you and the computer. If it is too hot for you, bets are your computer feels the same. As computers get faster and more heavily configured, heat builds up. Excess heat will cause the memory chips and chips on the motherboard to give errors or even fail. You will get random and unpredictable problems that often are hard to pinpoint or diagnose. Keep your computer away from windows where you get direct sunlight on the system and never put your computer over a radiator.
8. **Static electricity can destroy systems.** This can be something as simple as walking across a carpet and touching the keyboard or as complex as a lightning strike. A good rule of thumb is to avoid or limit the use of your system during a thunderstorm if possible. If there is a thunderstorm in progress or there are thunderstorms predicted for the evening or night,

consider unplugging the system. One of the best ways to protect your computer during a thunderstorm is a six-foot air gap between the cord and the socket. During the winter, touch a grounded metal object before touching your computer. It only takes 20 volts to damage a memory chip, that little spark you get when you touch the doorknob is about 20,000 volts. **You should have an uninterruptible power supply for your computer.** This will help prevent power spikes and surges from damaging the system. The minimal protection you should have is a fused power strip. It is not, however, advisable to mix the two; some UPS manufacturers suggest not even using a fused strip with the UPS.

9. **If you are going to be gone for 3 or more days, shut down and unplug the computer.** This will help keep the system from getting surges and spikes and keep it from being damaged when we lose power and it comes back on and off and on and off again. It is ok to leave the system on overnight; however, it is better to shut the system down over the weekend or over extended periods of absence.

10. **Make sure that you have the current version of an anti-virus program installed on your system.** We have had cases of "Melissa" and "Happy 99" virus on campus and at least one student has reported having "Back Orifice" on their personal computer. We try to keep the most up to date files available for your office system, make sure that you request it being there. We try to filter out e-mail viruses, but use of infected floppies can lead to total data loss as some viruses will either format or corrupt a hard drive.

Troubleshooting

Should you have a problem with your computer, try doing some basic troubleshooting before calling the Information Technology Department. "My computer won't work" does not give us much to go on when trying to get you going again. Use the steps listed below and determine if it is something that you can fix yourself or if you have to get help.

- **Is the system getting power?** Make sure that the UPS or power strip is plugged in and the switch is turned on. Make sure that the computer and monitor power buttons have been pressed. Try using a different wall socket. If a peripheral, such as a printer, is not working, make sure it is plugged in and turned on. This is probably the most common user fixable problem we encounter.

- **Is the failing device connected to the CPU and/or network?** This is the second most common problem that can be fixed by the user without calling for help. Make sure the power cables are plugged in. Make sure that the video cable has not come loose from the back of the monitor. Make sure that the network cable is properly plugged into the jack on the wall. You can not use a modem or

phone cable to make a connection with your network card and if you should get a call on that line while it is plugged into the network card, you may destroy your system.

- **Are you having trouble printing?** Again, make sure the printer is plugged in and that the printer is turned on. Make sure that ink jet printers have ink in the cartridges. If it is a laser and it is printing streaks or unevenly, make sure that the toner cartridge has toner in it or replace it. Remove ink jet cartridges if you are going to be away for an extended period, they sometimes leak and will damage the printer. Keep bugs and debris out of the printer, get a printer cover to keep it clean.

- **Is it making strange noises?** Hard drives going bad and bad CPU fans will make loud noises. This should be taken care of immediately to prevent data from being lost and/or system failure. Be aware that some CD players are very noisy and that they will make lots of racket when a CD is first put in or when accessing data.

- **If the system boots, where does it hang up?** If it does not go past the black startup screens, this could indicate hard drive problems. Write down what was on the screen at the time it quit working or any error messages you get. This will help us get you going quicker. Also, try not to just shut the system down by turning it off. Windows does not like that and will lose data that it is working on. Do a manual shutdown only as a last resort.

How to Request Service from the Department of Information Technology

To log a call for computer, printer, or network connection failure, you can do either of the following:

- Call extension 1820
- Use the [Online Support Form](#)

You should have the UAM Inventory number of your computer before logging a call for service of a computer or a peripheral.