How software utilities can improve performance

Disk defragmentation

As files get saved, changed or deleted, these files become fragmented, and are stored in different parts of the hard drive making them hard to find. The job in which the disk defragmenter carries out, is to find and sort all these cluttered files by joining them all together, clearing up space in the hard drive, improving the performance of the computer as it makes these items load up faster. If these files are to be left fragmented, then it takes time to locate these files making the computer take up some time finding them, and as this process is being carried out, it causes the system to slow down.  
Disk defragmentation can benefit other aspects of the computer such as when programs are to be ran. It improves the performance of programs as the defragmenter finds and locates data from that program, and groups them together, making it able to run well, improving its performance. Another way to keep a computers’ performance good is when a user deleted a program or file. Although deleted its remains can still be found on the hard drive/disk. For example, if a user really wanted to remove a program from their computer, apart from just deleting it, they should uninstall it to remove it completely from their computer, because if not, fragmented pieces of the file can still be found. This goes the same for deleting a file. Once deleted, proceed to the recycle bin and delete it permanently, clearing up space in the disk and keeping an up and running well performance. Scheduling frequent times for a disk defragmentation to occur on a computer can be very helpful as this means that your disk will be tidy, and would mean that accessing programs and applications will be done faster as it would speed up the computers’ performance and making the computer more efficient. Defragmentation should be scheduled weekly in order to maintain good performance.

Anti-virus

Antiviruses are installed onto computer systems in order to prevent viruses, worms, Trojans, and malicious threats. It tends to improve a computers performance as it can prevent viruses from damaging a computers operating system. Having an antivirus installed onto a user’s computer system means that their system will be protected from viruses. All types of viruses can occur and try to damage the computer, whether it is by infecting it and corrupting data or by slowing down the computer’s performance. Having an antivirus means that it can detect and identify them and can prevent them from doing and damage to the computer, as well as removing them, and that is why they are so important, if installed and updated frequently, antivirus will not only prevent viruses attacking a computer system, it will also improve the computer’s performance and have everything running fast as there won’t be any viruses hiding anywhere on the system. So for example, to keep a computers’ performance well from viruses, you can simply set scheduled updates for the antivirus to run scans either on a day to day basis, or weekly, and this secures a safe protected computer system.

Disk formatting

The way that disk formatting can improve a computers’ performance is that it is able to remove system files whilst formatting the hard disk. The longer system files tend to stay on the computer system, the more they become corrupted. By formatting them and reinstalling them means that fresh versions can be restored onto the system speeding up the computers performance as the corrupted ones would have slowed down the performance. Another way that disk formatting improves performance is that when all files are being formatted, it also erases all viruses and malicious files in the process. Having viruses on a computer system slows down the performance as they are able to duplicate themselves taking up plenty of space in the hard drive whilst being hidden. For example a virus that uses polymorphing, being able to change its size and appearance which makes it harder for antivirus software to locate and remove them, whereas by disk formatting, all viruses along with files with hidden viruses attached to them are formatted and removed from the hard disk, resulting with free space and a computer with faster performance. Also, by formatting the hard disk it means that the user has cleared up hard drive space. For example, after a user has formatted the computer’s hard disk, the data that was previously on the disk would have been erased, resulting with a lot of free space for the user to use again. Having files formatted means that the system will then erase all unnecessary files that were filling up a lot of space on the hard drive, and as it has erased them clearing up a lot of space this means that the computer will start to run faster yet more efficiently, increasing the performance of the computer.

Compression

When compressing files, it allows the user to store even more files on the hard drive as possible. For example lossless compression uses ZIP files and reduces the file size of files such as an mp3 file, having the user able to store a good amount of mp3 files due to the fact that the file is compressed and that the compressed file size is reduced. Therefore by compressing files means that there would be more clear space available which means that the computer’s performance would be fast. By carrying out disk compression, it means that the computer is able to store more data onto the hard disk. Disk compression carries out its task automatically without the users concern, whereas with file compression, the user carries out the compression of files. The way that disk compression improves performance is that when data is compressed it doesn’t take up as much space, and so less data would have to be stored. Also another way that it could speed up performance is when the user would want to access the data it is already set up and arranged for the user to access, reducing efficiency to the whole process of compression. By using compression and having to decompress files means that the CPU would be used effectively, improving the performance of the computer.