

# An approach to enhance performance of Computer- Literature Review

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**Abstract:** Everybody wants the fastest computer they can get, but what really makes up the computer's speed? Computer clock speeds now reach over 4 GHz these days, but clock speed is not the only factor that determines the speed of your computer. Performance of our computer can be determined by different hardware factors. Some of the hardware factors include the speed and size of your RAM, front side bus speed, clock speed of the CPU, cache memory, and access time for hard disks.

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**Introduction:** To increase computer speed is basically achieving the computer speed and performance consistency. Most of the computer problems are the result of viruses, spywares and the registry overload. If proper care is taken in addition to hardware maintenance check, computer performance can be stabilized. No one can afford to lose important data just because of poor computer maintenance.

The following steps are provided to help you improve the computer speed performance and increase the life period of your system.

It's something we can all relate to that dreaded moment when we realize your once super fast computer is now bogged down by renegade files, programs, and services. It mean, the most exciting part of buying a new PC is the first time we turn it on and experience it's amazing speed. "I'm going to be more productive than ever" you exclaim. And then after a few months of usage perhaps a few years the productivity and computer have both slowed to a crawl.

## **Literature Review:-**

The speed and size of your RAM is very important. The amount of memory your computer has installed can determine its performance. The more memory installed, the faster your computer can access information without having to use its virtual memory which is slower than RAM. The width of the memory's data path can also affect its access time. The time that the CPU has to wait for memory to be accessed limits it performance.

The front side bus speed is another factor that can determine the speed of your computer. The front side bus is the pathway from your CPU to your I/O devices.

The clock speed of your processor is important in determining the overall speed of your computer, but not the most important factor. The clock, whose speed is measured in megahertz and gigahertz, supplies the CPU with electrical pulses that synchronize.

## **What affects a computers performance?**

Overall, the performance of a computer is dependent on how well it works together as a whole. Continually upgrading one part of the computer while leaving outdated parts installed will not improve performance much, if at all. Below, we discuss some of the most important parts of the computer regarding it's speed and computing power. The description of these parts is by no means complete and only serves to give newer users some understanding of what various computer specifications mean. The processor, memory and video card are the most important components when determining performance inside a computer. Any specifics about pieces of hardware will be outdated in about six months or so. Gaining an understanding of what each specification means, and what each part does, is the goal of this section.

### **1. Disk speed and size (RPM's and Gigabytes)**

The biggest factor in your computer's performance is the hard disk speed. How fast the hard drive can find, read, write, and transfer data will make a big difference in the way our computer performs. Most hard drives today spin at 7,200 RPMS, older models and laptops still spin at 5,200 RPMS, which is one reason laptops often appear sluggish to a desktop equivalent.

The size of our hard drive plays a very little role in the performance of a computer. As long as our have enough free space for virtual memory and keep the disk defragmented it will perform well no matter what the size.

## 2. System RAM speed and size (MHZ and Megabytes)

The amount and speed of the RAM in your computer makes a huge difference in how your computer performs. If you are trying to run Windows XP with 64 MB of RAM it probably won't even work. When the computer uses up all available RAM it has to start using the hard drive to cache data, which is much slower. The constant transfer of data between RAM and virtual memory (hard drive memory) slows a computer down considerably. Especially when trying to load applications or files. The two types differ in the technology they use to hold data, dynamic RAM being the more common type. Dynamic RAM needs to be refreshed thousands of times per second. Static RAM does not need to be refreshed, which makes it faster; but it is also more expensive than dynamic RAM. Both types of RAM are volatile, meaning that they lose their contents when the power is turned off.

Also the speed of your RAM can be influential. The normal speed of RAM in most computers today is pc100 (100mhz). This runs fine for most applications. Gamers or high-end machines probably are using DDR (double data rate) RAM. It's newer and more expensive, but runs considerably faster (266 MHz). Note that all computers cannot use DDR RAM.

## 3. Processor speed (MHZ, L1 L2 cache)

Clock speed, a.k.a. Processor speed is often played up to be the major factor in a computer's overall performance. In rare cases this is true, but an average user rarely uses 100 percent of his Central Processing Unit's power. (CPU). Things like encoding video or encrypting files, or anything that computes large, complex, numbers requires a lot of processor power. Most users spend most of their time typing, reading email or viewing web pages. During this time, the computer's CPU is probably hovering around 1 or 2 percent of its total speed. Startup time is probably the only time the CPU is under stress, and even then it's often limited due to the hard drive speed.

### Keys to remember:-

Following are some keys to remember and implement for enhancement of speed of Computer in our daily life.

#### 1. Reduce Items that Run on Startup

If our computer takes a long time to start up, the first thing we want to do is check everything it starts when we switch on the power button.

To do this, click on the Windows button, click "run," and then type "msconfig" into the box. Click on the "Startup" tab. Some things you want to leave alone.

#### 2. Remove Programs No Longer In Use

Along with preventing every app on our computer from starting with Windows, we should also assess which programs we no longer need and remove them. Always access the uninstaller tool from our control panel and use that to uninstall programs we don't use.

#### 3. Clean the Drive

Clean up our drives by typing "cleanmgr.exe" into the run menu to access Disk Cleanup. This is that "search programs and files" box that shows when we hit the Windows Start icon, usually in the lower left of most screens.

#### 4. Consider Switching From Internet Explorer to Chrome

If we are using Internet Explorer as our Web browser, it is time to upgrade. Make the Google Chrome download the last thing we do on it. Chrome is faster and has fewer bugs than Internet Explorer users.

#### 5. Clean the Browser

Regardless of our browser, we should clean it out regularly. To clean Chrome, click the three bars icon in the upper right corner, then click "Tools," then "Clean Browsing Data," and then check the history boxes, cookies and cached items.

#### 6. Scan for Remove Malware

Anything that starts with "mal" must be stopped. We should regularly scan our system to get rid of any malware that may be slowing our computer down.

#### 7. Scan for Remove Viruses and Spyware

In addition to performing regular scans on our computer for malware, we should also regularly scan for viruses and spyware. Access your antivirus and manually perform a scan. You can schedule these weekly. Viruses are too many. There is always the chance to get infected from them if you use internet. Always have a good antivirus installed on your computer.

#### 8. Disconnect internet if virus is suspected.

If we detect some viruses then initially Disconnect internet if virus is suspected, then kill it with the help of Anti Virus.

#### 9. Don't use more than one Anti Virus

Having more than one antivirus on our computer will slow it down, it is better to run only one.

## 10. Make Adjustments for Better Performance

If we want better performance and don't mind losing visual effects such as mouse shadows, click on "computer," and then "system properties," and then "advanced system settings." we will find a performance settings button that allows us to select "adjust for best performance."

## 11. Maintain screen resolution

We can also reduce our screen resolution, which can speed things slightly and improve battery life when running on it.

## 12. Defrag the Drive

We should defragment our drive or schedule it to perform this action automatically.. However, if we excessively download, move, uninstall, or install programs, you may need to do it more frequently. In general, we can do this monthly

## 13. Add More RAM Memory

There are a few physical things we can do to increase our performance. We can and should add more RAM memory until the computer is at capacity. By increasing the size of RAM the data transfer rate can be enhanced.

## 14. Upgrade to an SSD Drive

We can upgrade to an SSD drive. This will make our computer run faster, but they are more expensive and have overall less storage capacity. The data is safe more than other types of Memory.

**15. Beware of advertiser hype:** If our system is affected by a fatal error always use the services of a trusted computer professional. Do not rely on advertisers claiming to correct PC errors with a magic wand.

**16. Cool your machine:** If our computer suddenly starts operating very slowly, check to see if the case feels overly hot. Especially in hot climates, make sure the computer has adequate air flow around it. Overheating causes myriad problems like non working of different Hardware.

## 17. Upgrade to a better video card

For typical business productivity tasks, better video cards can be a huge benefit even without heavy onscreen video work, because certain applications can leverage the GPUs for calculations.

## 18. Get a faster drive

Many times, the real performance issue is the speed of disks. Look at numbers like the RPMs, cache size, seek speed, and transfer rate to justify buying a faster drive. Often, a good drive will seem slow because the computer's power settings are allowing it to spin down. We should want to consider changing these settings to make sure that the disk is more likely to be ready to work when we need it to.

## 19. Address hardware and driver issues

Bad hardware drivers can often make the whole system slow, especially video drivers. Using utilities to check your CPU speed and various temperatures, scanning for hard drive errors, and updating your drivers is a good start to investigating performance problems.

## 20. Use a RAID

Using a RAID technique can lower the read and write speeds of your disks, depending on the RAID level we choose. This topology is needed to maintain the backup of Data and speed.

## 21. Remove junk

It's easy to have a computer get loaded up with junk that slows it down. The worst part is, we invite this garbage into our lives by installing "helpful" utilities, toolbars, and other adds ons.

## 22. Add a faster DNS lookup server

Most ISPs like to brag about how much bandwidth they are giving you. But they don't mind letting the rest of their infrastructure slowly get overwhelmed or deteriorate. Among the biggest offenders are the DNS servers our ISPs use.

## 23. Check network connectivity

Our computers do so much on the Internet that slowness there can affect just about everything you do on a regular basis. While there isn't enough space to write an exhausting troubleshooting list here, some of the things we should investigate are:

- Replacing the network cables, switches, routers, Wi-Fi access points, etc.
- Calling the ISP and checking the distance from the CO for DSL or the local segment's current load for cable; the ISP may need to rewire or rework its connectivity. Satellite customers will want to double check their dish installation and ensure that it is tightly locked down and pointed in the right direction.
- Malware scanning on all PCs to see if malware is burdening the network
- Inspecting the wiring of the phone lines for DSL or coax for cable customers to look for loose connections, corrosion, or flaky wires
- For cable customers, finding out how many splitters are between the line from the pole and their modem. If it is more than one, they should rewire so that they have only a single two way splitter between the pole and the modem to ensure the cleanest signal possible.

#### **24. Clean up the registry**

Machines get bogged down simply because of errors in the registry. Of course, the registry isn't something just any old user (or administrator) should attack. Purpose is to clean up the registry

#### **25. Check the disk for errors**

With a machine that's aging or whose hard drive has seen excessive use, sectors on that drive can wind up bad. To remedy this, we need to issue a command and reboot your machine. The command is chkdsk.

#### **26. Change Processor scheduling settings**

The Processor Scheduling section controls how much processor time Windows XP devotes to a program or process. The processor has a finite amount of resources to divide among the various applications. Choosing the Programs option will devote the most processor time to the program running in the foreground. Choosing Background Services allocates equal processor time to all running services, which can include print jobs and other applications running in the background.

#### **27. Change Memory Usage settings**

The Memory Usage section governs how operating system uses system RAM. The first option, Programs, allocates more RAM to running applications. For desktop systems with very little RAM, this selection gives the best performance. However, choosing the System Cache setting will yield better performance. When set to System Cache, the system will use most of the available RAM as a disk cache, which can result in major performance improvements on systems that depend on disk I/O.

#### **28. Change Virtual Memory settings**

A number of settings in the Virtual Memory section affect how operating system performs. Virtual memory is an area on the disk that Windows uses as if it were RAM. Operating system requires this type of system in the event that it runs out of physical RAM.

#### **29. Alter BIOS settings**

Many hardware experts consider changing the system BIOS to use Quick Boot and Boot Device Priority a good idea.

#### **30. Disable unused hardware**

Computers have hardware that activates at startup even though it's not used. That adds to the boot time. If a particular device is not used, including virtual adapters, right click on it in Device Manager and disable it. In Device Manager, look for unused network adapters, Bluetooth controllers, PCMCIA card controllers, modems, and multimedia devices like game ports.

#### **31. Remove extraneous fonts**

Both Windows XP and Windows 7 load more than 200 fonts at startup. And that number jumps big time if Office is installed. Are all those fonts necessary? If not, remove them. The computer will boot faster.

#### **32. Let Win Patrol help**

Win Patrol can optimize booting. Once Win Patrol is open, pay attention to the following three tabs: Startup Programs, Delayed Start, and Services. Startup Programs displays all the programs that start with the computer Win Patrol will provide an explanation. If you don't think the program needs to start right away, disable it.

#### **33. Use the Windows Services app to change startup type**

Win Patrol helps you determine what a particular service is and whether it needs to be activated at startup or started manually when needed.

#### **34. Clean Your Desktop**

Is your Windows Desktop dotted with files? Always clean unused files or folders to enhance the performance.

#### **35. Scan Your Windows System for Errors**

An operating system is a collection of files that perform different functions. It is possible, over time, that one or more of these system files has changed or become corrupted. If this happens, the speed of your system may decrease. By using a utility called "System File Checking", it will inspect these files and correct any problem it finds.

#### **36. Uninstall Unused Programs**

Over time, we may have accumulated programs on our computer that we do not use. When a program is installed, it creates connections between the program and the operating system. Even if we don't use these programs, they can slow down our system. We will free up space on our computer and may speed up our system's performance.

#### **37. Reinstall the Operating System and Programs**

If you have done all the above steps and your computer does not become more responsive, you might consider reinstalling the operating system and programs.

#### **38. Preventing memory allocation problems**

Allocated memory space from programs that are no longer open can cause problems. Over time, this unused memory space can build up, causing Windows to slow down and use the hard drive more.

Memory leaks can happen when software is closed before it has fully opened. Always allow programs time to fully open before closing them. As a rule, wait five seconds after a software program opens before closing it again,

**39. Freeing up space on the hard drive**

Always try to make as much as possible free space on hard disk by which performance of data transfer may be enhanced.

**40. Use Microsoft Fix It**

The tool Microsoft Fix It is a free tool from Microsoft that can help users of Windows to clean up and perform many simple maintenance problems

**41. Use Prefetch**

Frequently use the Prefetch command to delete prefetched file generated during different types of operations by an Operating System.

**42. Delete Temporary File**

Always delete temporary file occurred during different transaction and communication of data by using command “temp”.

**43. Delete recently used Files**

Always delete temporary file known as recent files occurred during different transaction and communication of data by using command “recent” to enhance the performance of Memory.

**44. Manage Recycle Bin**

Always clean Recycle Bin to enhance the performance of Memory as well as CPU.

**Conclusion:-**

So many methods were discussed above to enhance the performance the speed of Computer. As we know each and every user uses the Computers but they don't have the proper knowledge of maintaining the same. It was suggested to follow the above guidelines for smooth functioning of any type of Computer.

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