PC running slow?

Should you upgrade or replace your desktop PC?

A few simple checks to help you decide:

The #1 cause of desktop and PCs responding slowly is not having enough RAM to handle the desired combination of tasks. Simply installing more RAM into your PC can make a “night and day” performance difference. So, how do you know if your PC has “enough” RAM? The answer can be figured out in a few simple steps.

1) Open up any programs that you use on a regular basis. For example, open a Word document, open an Acrobat PDF file, browse to a web page, and log into your email in separate windows at the same time. The idea is that you want the combination of open tasks to represent how you normally use your PC.

2) Press ctrl-alt-del together at the same time. Depending on how your PC is configured this will either open the Windows Task Manager or bring up a window which will allow you to click on a button labeled “Task Manager” to open the Windows Task Manager.

3) Then click on the “Performance” tab. You should see a window that looks like the following:

![Windows Task Manager](image)

4) Now compare the “Commit Charge Total” with the “Physical Memory Total”. In the example above, the Commit Charge Total is approximately 653MB and the Physical Memory Total is approximately 1GB. In this case the computer is running fine since the Commit Charge Total is less than the Physical Memory Total. The Commit Charge Total will go up as you open more tasks. The Physical Memory Total can only be increased by installing more physical RAM. If the Commit Charge Total is greater than the Physical Memory Total it means that your computer is temporarily using hard disk space to substitute for the lack of physical RAM which causes the computer to run slowly.
5) If after checking the above you find that you do already have enough physical RAM, then installing more RAM probably isn’t worth the effort and in most cases won’t make much of a difference, if any.

6) If it does turn out that your PC is lacking the amount of physical RAM required to accomplish your tasks, the next question is whether it’s technically possible and worth the cost of upgrading the RAM. That mostly depends on the processor that your PC is based on.

7) To check the processor, go to the “Start” menu → “Run...” and then type “winmsd” into the dialog box and click “OK”. You should see a window open up that looks similar to the following:

8) In the example above, the important piece of information is Processor - “GenuineIntel ~2192 Mhz” which means that the computer is based on a 2.2Ghz Intel brand CPU.

9) The low cost RAM upgrades currently available on the market today are generally designed to work with Intel brand CPUs that are 1.8Ghz or faster. The upgrades can also be used in some PCs based on AMD brand CPUs. If your PC is based on an Intel brand CPU 1.7Ghz or slower, it’s probably not worth upgrading (in terms of cost) and might not even technically be possible depending on the computer’s brand and model. If the computer is based on an Intel brand CPU 1.8Ghz or faster it should be relatively simple to upgrade it with the needed amount of physical RAM. 1.8Ghz is still fast enough to run today’s productivity applications (Office 2007, etc) and the RAM upgrade should cost quite a bit less than purchasing a new PC. Please contact ATS or your departmental technician for further information or if you would like to request a RAM upgrade.

If you have any questions regarding any information contained within this document, please contact ATS via phone: 313.577.3824 or via email: ats@eng.wayne.edu