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System 7: Optimizing Performance with Virtual Memory

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Security: Everyone

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TOPIC -----

- 1) Is it true that I shouldn't set the virtual memory to more than twice the real RAM installed in the machine, to avoid too much "bank switching"?
- 2) Is there any performance loss by placing the virtual memory file on a hard disk other than the startup disk?
- 3) Will I get better performance if I set virtual memory to LESS than twice the amount of real RAM?

DISCUSSION -----

- 1) With 32-bit addressing on and enough space available to allocate on hard disk, you can create a very large virtual memory address space. However, it's best for performance reasons to limit the size of your virtual memory to twice the size of installed RAM. By limiting the size of your virtual memory, you will help eliminate excessive paging activity, known as "thrashing".
- 2) You should place your memory file on a drive that is least accessed. If you place the memory file on a disk that has the system file and data files that are accessed by applications, then performance of virtual memory will degrade because the disk read/write heads must be jumping around to satisfy the system or application requests. By placing your file on the least accessed disk, the read/write head will more likely be left in a state where it won't have to travel far on its next request.
- 3) You will get better performance by using less than twice the amount of real memory. This is because more of your application will reside in main memory than on disk -- reducing paging activity. The flip side of this is that there will be less room in memory for

additional applications.

The Macintosh file system manages files efficiently by fragmenting them, but fragmentation can eventually slow your Macintosh computer's overall performance and increase wear on the drive. By defragmenting your files, including the virtual memory file, you can improve the disk access speed and therefore improve performance. Central Point Software has a product (Central Point Optimizer) that will defragment your disk.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

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