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## A/UX: Memory Control Panel, Caching, and Swap Space (6/93)

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### TOPIC -----

In trying to understand the interactions of the Memory control panel and the A/UX paging space, I have come up with two questions:

First, what is the relationship between Disk Cache in the Memory control panel and the A/UX swap space?

Second, what is the relationship between Macintosh Virtual Memory in the Memory control panel and the A/UX swap space?

### DISCUSSION -----

To answer the first question, A/UX Disk Cache in the Memory control panel has no particular relationship to the A/UX swap space. Increasing the Disk Cache setting in the Memory control panel allocates more space for the Multifinder handling disk caching for Macintosh applications, while reducing memory available to the Finder. To see this increase, take a look at the size of "System Software" in the "About This Macintosh" dialog. A/UX kernel I/O buffering does the actual disk caching.

As to Virtual Memory in the Memory control panel, it is used to adjust the virtual memory space allocated for the A/UX MultiFinder. It has the same effect as the TBMEMORY environment specifier in .profile or .login. (Virtual memory is created in the A/UX Swap disk partition.)

For best performance, we suggest that you make the maximum virtual memory size no larger than twice the size of the physical RAM in the system. For instance, a system with 16MB of real RAM can enjoy a total of 32MB of virtual memory.

The A/UX virtual memory approach is different than that in the Mac OS.

A/UX virtual memory is handled by the A/UX demand paging system scheme. Pages can be swapped in and out between real memory and the swap space by demand.

Note that the swap space is used by both A/UX Finder and UNIX processes. If a Macintosh application requests virtual memory space exceeding available Finder virtual memory, it acts as it does in the Mac OS; it asks you to close some application, so it can release memory. If a UNIX process needs virtual space exceeding the available swap space, the kernel returns a "run of swap space" message.

In short, depending on what you are doing, you should adjust your swap space and the virtual memory allocation (via the Memory control panel or TBMEMORY) as appropriate to the Macintosh environment.

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