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Macintosh OS and A/UX Virtual Memory

Revised: 9/3/92
Security: Everyone

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Article Created: 23 February 1989
Article Last Reviewed: 31 August 1992
Article Last Updated : 31 August 1992

TOPIC -----

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DISCUSSION -----

A Macintosh application that requires a large amount of memory under the Macintosh OS can, in some circumstances, run in a smaller memory size under A/UX by taking advantage of virtual memory.

A/UX is a multitasking, 32-bit, virtual memory operating system. Theoretically, you can have applications make memory allocation requests greater than the existing physical memory size as long as the disk space reserved for paged-out memory (the swap space) is not full.

In the Macintosh OS environment, the Macintosh memory management tools are designed for control of a known amount of physical memory; some of the Macintosh memory manager functions don't make sense under virtual memory.

In a virtual memory environment, such as A/UX, it's not clear what value the call to determine the amount of free memory available should return. In the current implementation of A/UX Toolbox in A/UX 1.0, memory query routines such as FreeMem respond as if the application had a 1MB chunk of free memory.

If the Macintosh OS application program in question was rewritten so that memory allocation routines, like NewPtr and NewHandle, did not request more than 1MB at a time, then it should run OK under A/UX.

An application can continue to allocate 1MB chunks as needed, and A/UX will respond by using virtual memory. For example, the Macintosh OS application could allocate 1MB chunks of memory 10 times (10MB in total exceeds Macintosh II's 8MB maximum memory size), which should run without any problem under A/UX.

In A/UX 3.0, virtual memory is configurable in the memory control panel.

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Tech Info Library Article Number:3497