

Allocated Memory Blocks

Page K for PowerPC

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The IRM systems support a Page K application that shows the current allocated memory blocks. This note describes how a similar facility can be implemented for the PowerPC-based systems. The scheme is based on a diagnostic recently added that logs all calls to `AllocP()` and `FreeP()`, which themselves invoke `malloc()` and `free()`, respectively.

The diagnostic writes a record into a data stream called "ALLOCLLOG" every time a block of memory is allocated or freed. A local application can be written to monitor all such records and maintain a list of currently active memory blocks. Then a new Page K application can be written to take advantage of this list and display it in a suitable format. So the scheme requires both a local application and a page application to produce the desired result. But it is hoped that the page application can be modeled strongly on that currently used for Page K, which is generally attached to `PAGEMBLK`.

The local application, perhaps called `LOOPMBLK`, monitors the data stream records written for each allocated block. If there is an allocation, it adds a new entry to its structure. If there is a freeing of a block, it removes it. The key information kept is merely the base address of the allocated block and its size. It would be useful if the list is maintained in memory-increasing order; *i.e.*, those blocks allocated with lower base addresses occur before those with higher base addresses. Such an ordered list will make it easy for the new Page K logic to use it.