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Macintosh Parity-Equipped: Parity Bits Reset Between RAM and VM

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TOPIC -----

Will a parity-equipped Macintosh (with virtual memory enabled), such as the Macintosh IIci, maintain parity when paging information between RAM and virtual memory?

DISCUSSION -----

The question implies a loss of functionality if the parity bits aren't written out to virtual memory. Actually, this isn't the case. Virtual memory has no need to keep track of the RAM parity bits in parity-equipped Macintosh computers.

The reason is that the parity bits are set when you write to RAM. When virtual memory pages information back into RAM, the parity bits are set once again as appropriate. Since the parity bits are for handling data corruption in RAM, once you write to disk, it's up to the disk, its driver, and the file system to ensure data integrity rather than using the same mechanism used in "parity" RAM.

Also, when virtual memory reads the information in RAM, it doesn't have access to the parity bits. It reads a byte; it gets that byte's value.

Finally, imagine the excess overhead associated with moving around and storing that additional information. If you had 16MB set for virtual memory, you would need an extra 2MB of disk space just to handle the parity bits.

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