

A B S T R A C T**METHODS AND APPARATUS FOR CONTROLLING
A MULTI-SEGMENT CACHE MEMORY**

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The present invention relates to the control of a cache memory (13) in a storage system (2). According to the invention, the cache memory is segmented to operate at a selected working segmentation level, and at least two virtual cache tables (52, 54) are segmented to operate, respectively, at the working segmentation level and at least one different segmentation level. Instructions received from a host computer (4) are stored in an instruction queue (50). Then, while the storage system is in an idle state, hit ratio simulations are performed on the virtual cache tables by executing a selected number of instructions stored in the instruction queue. The working segmentation level is subsequently adjusted to equal the segmentation level of the virtual cache table having the highest hit ratio.

[Figure 2]

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