

(19) United States

(12) Patent Application Publication (10) Pub. No.: US 2009/0300269 A1 Radke et al.

Dec. 3, 2009 (43) **Pub. Date:**

(54) HYBRID MEMORY MANAGEMENT

William H. Radke, Los Gatos, CA (76) Inventors:

(US); Michael Murray, Mountain View, CA (US); Martin Ragnar Furuhjelm, Grass Valley, CA (US); John Geldman, Los Gatos, CA

Correspondence Address: LEFFERT JAY & POLGLAZE, P.A. Attn: Thomas W. Leffert P.O. Box 581009 Minneapolis, MN 55458-1009 (US)

(21) Appl. No.: 12/127,945

(22) Filed: May 28, 2008

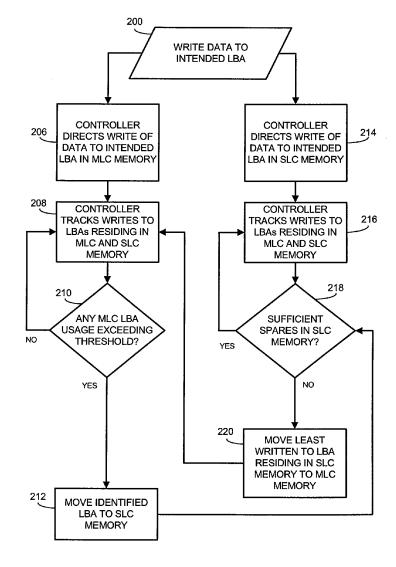
Publication Classification

(51) Int. Cl. G06F 12/02 (2006.01)

(52) **U.S. Cl.** 711/103; 711/E12.008

(57)ABSTRACT

Methods and apparatus for managing data storage in hybrid memory devices utilizing single level and multi level memory cells. Logical addresses can be distributed between single level and multilevel memory cells based on a frequency of write operations performed. Initial storage of data corresponding to a logical address in memory can be determined by various methods including initially writing all data to single level memory or initially writing all data to multilevel memory. Other methods permit a host to direct logical address writes to single level or multilevel memory cells based on anticipated usage.





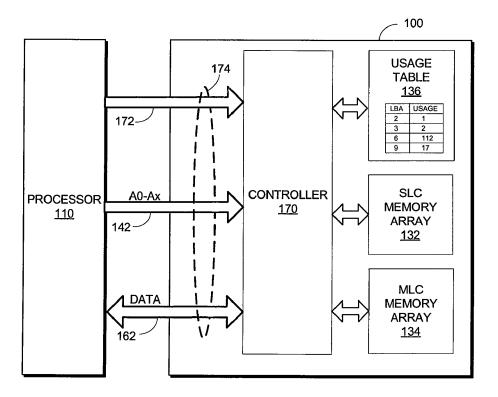


FIG. 1

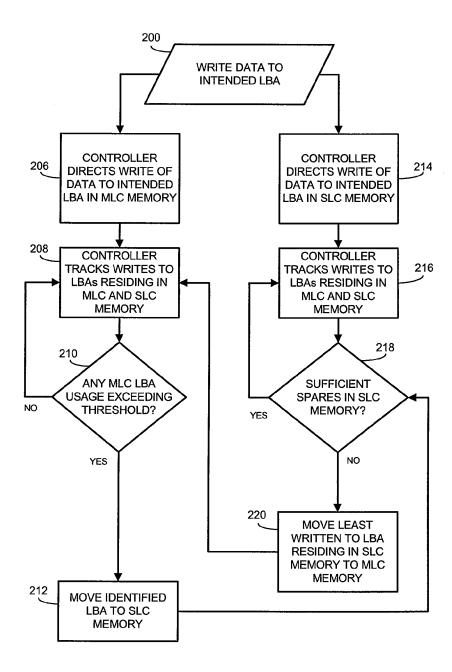


FIG. 2

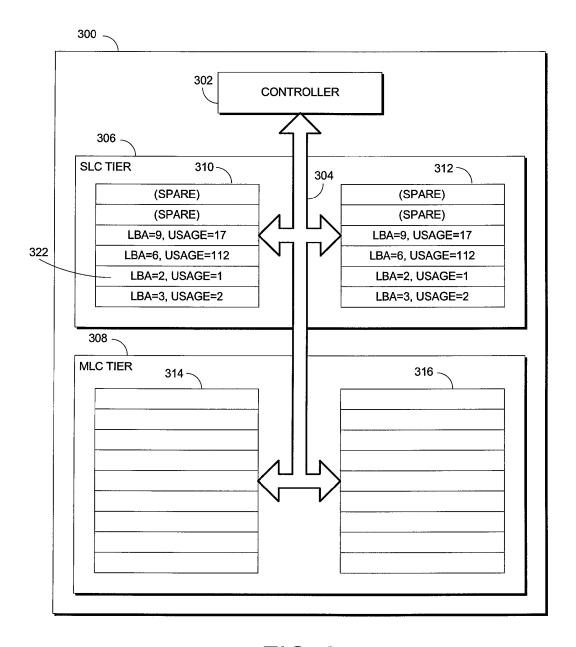


FIG. 3

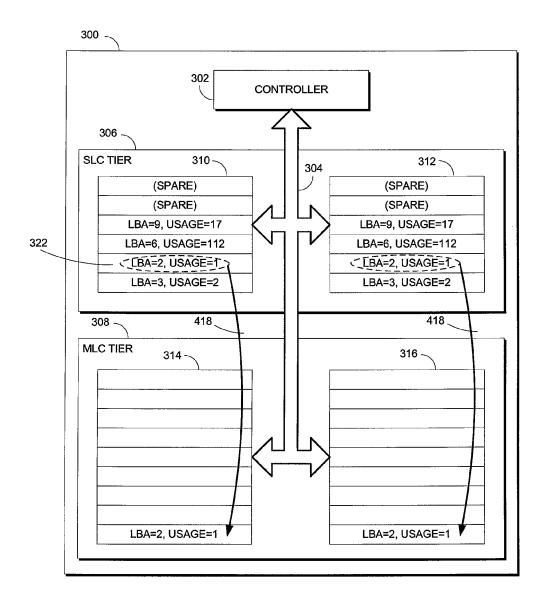


FIG. 4



DOCKET A L A R M

Explore Litigation Insights



Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time** alerts and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.

