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- (71) Applicant (for all designated States except US): **FUSION-IO, INC.** [US/US]; 2855 E. Cottonwood Parkway Box 100, Salt Lake City, Utah 84121 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **NELLANS, David** [US/US]; 1120 S 1300 E, Salt Lake City, Utah 84105 (US). **WIPFEL, Robert** [US/US]; 2229 Kodiak Court, Draper, Utah 84020 (US).
- (74) Agents: **HILTON, Scott** et al.; 8 East Broadway Suite 600, Salt Lake City, Utah 84111 (US).

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(54) Title: APPARATUS, SYSTEM, AND METHOD FOR APPLICATION DIRECT VIRTUAL MEMORY MANAGEMENT

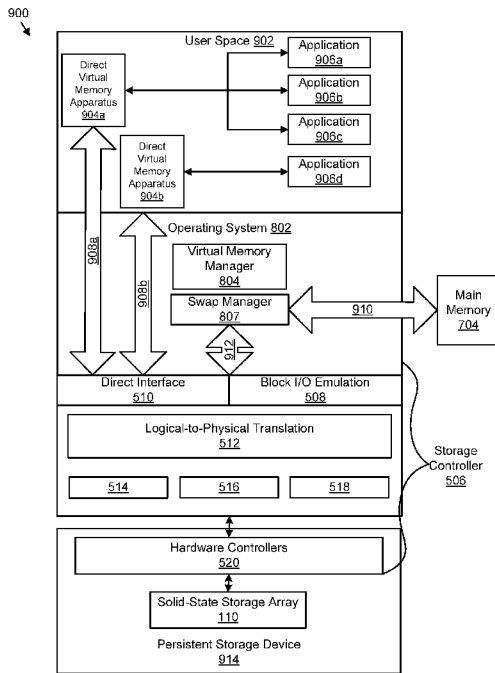


FIG. 6

(57) Abstract: An apparatus, system, and method for application direct virtual memory management. The method includes detecting a system memory access to a virtual memory address within a monitored page of data not loaded in main memory 704 of a computing system 900. The method includes determining a first swap address for a loaded page of data in the main memory 704. The first swap address is defined in a sparse virtual address space 1014 exposed by a persistent storage device 914. The first swap address is associated in an index 1012 with a first deterministic storage location. The index 1012 is managed by the persistent storage device 914. The method includes storing the loaded page on a persistent storage device 914 at the first deterministic storage location. The method includes moving the monitored page from a second deterministic storage location to the main memory 704. The second deterministic storage location is associated with a second swap address in the index 1012.



A. CLASSIFICATION OF SUBJECT MATTER**G06F 12/08(2006.01)i, G06F 9/44(2006.01)i**

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

G06F 12/08; G06F 12/00; G06F 9/00; G11C 29/00; G06F 11/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) & Keywords: system memory, virtual memory, swap, persistent storage

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 7610523 B1 (SINGH AMANDEEP) 27 October 2009 See column 5 line 63 - column 7 line 6, and figure 1.	1-20
A	US 2006-0161751 A1 (JOHN BARRS et al.) 20 July 2006 See paragraphs [0036]-[0055], and figures 3-6.	1-20
A	US 6983467 B2 (G. ERIC ENGSTROM et al.) 03 January 2006 See column 10 lines 24-38, and figure 4.	1-20
A	US 7178068 B2 (DAVID L. MAISON et al.) 13 February 2007 See column 4 lines 45-47, and claim 10.	1-20

 Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents:

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Korean Intellectual Property Office
189 Cheongsu-ro, Seo-gu, Daejeon Metropolitan
City, 302-701, Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

Park Ji Eun

Telephone No. 82-42-481-5696



INTERNATIONAL SEARCH REPORT

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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