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- (71) **Applicant:** HEWLETT-PACKARD DEVELOPMENT COMPANY, L.P. [US/US]; 11445 Compaq Center Drive W., Houston, Texas 77070 (US).
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- (81) **Designated States** (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY,

BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

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Declarations under Rule 4.17:

- *as to the identity of the inventor (Rule 4.17(i))*
- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*

Published:

- *with international search report (Art. 21(3))*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

[Continued on next page]

- (54) **Title:** ATOMICALLY COMMITTING WRITE REQUESTS

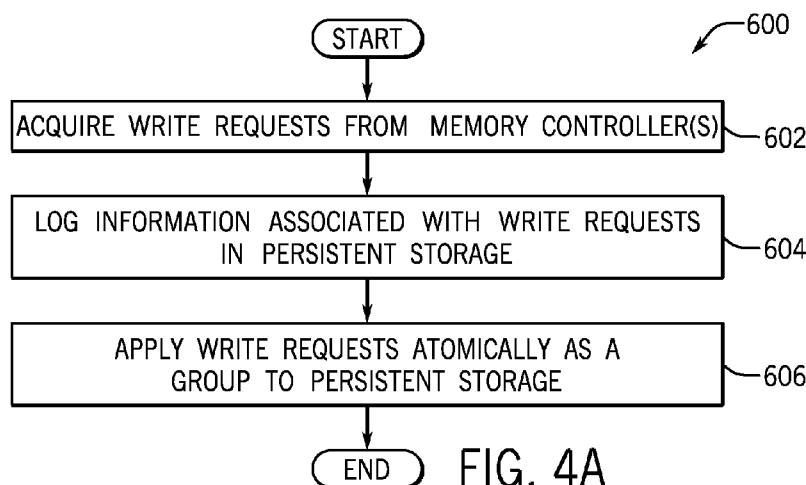


FIG. 4A

- (57) **Abstract:** A technique includes acquiring a plurality of write requests from at least one memory controller and logging information associated with the plurality of write requests in persistent storage. The technique includes applying the plurality of write requests atomically as a group to persistent storage.



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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2014/012742**A. CLASSIFICATION OF SUBJECT MATTER****G06F 12/08(2006.01)i, G06F 12/16(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; H04L 1/22; G06F 12/16; G06F 17/30; G06F 11/08; G06F 12/00; G06F 9/46; G06F 13/00

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: memory, write request, logging, temporary, storing, atomicity, group, non-volatile, persistent

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2003-0005354 A1 (DEAN ALAN KALMAN) 02 January 2003 See paragraphs [0002], [0011], [0024]; claims 1, 4-5, 9, 16; and figure 2.	1-15
Y	US 2012-0030408 A1 (DAVID FLYNN et al.) 02 February 2012 See paragraph [0247]; claims 1, 7; and figure 1.	1-15
Y	US 2008-0140733 A1 (WILSON WAI SHUN CHAN et al.) 12 June 2008 See paragraph [0006]; claim 1; and figure 1.	6, 12, 15
A	US 2007-0162692 A1 (AKIRA NISHIMOTO et al.) 12 July 2007 See paragraphs [0013], [0047]; and figure 4.	1-15
A	EP 1349066 A2 (TEXAS INSTRUMENTS INCORPORATED) 01 October 2003 See paragraphs [0002], [0005], [0008]-[0012]; and figure 1.	1-15



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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		JP 2003-271380 A	26/09/2003
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