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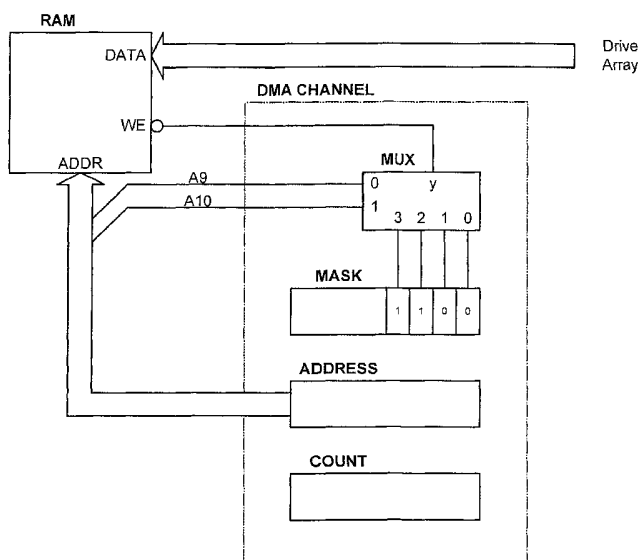
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(54) Title: RAID CONTROLLER DISK WRITE MASK



(57) Abstract: A raid disk array controller implements a write mask (16) to support partial-stripe updates from a host system (60) without expensive RAM to RAM copying and repeated disk accesses to assemble the updated stripe. New data from the host (20, 22) is transferred into a single buffer (14, 40) and a local processor (80) tracks -- by setting bits (30, 32) in the write mask -- which segments of the target stripe are updated. The disk array is accessed to transfer the target stripe into the same buffer (40), but the buffer memory write enable (58) is inhibited - responsive to the write mask (52) -- during transfer of the segments that were updated by the host. The complete, updated stripe is thus formed in a single buffer for parity calculations and write to the disk array.



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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/32166

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : G06F 12/00

US CL : 711/114, 113

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)

U.S. : 711/114, 113

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM-TDB

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US 5,315,602 A (NOYA et al) 24 May 1994 - fig. 1 & 2, col. 4, line 37 to col. 5-7.	1, 4 - 7 & 11 - 13 ----- 2, 3, 8 - 10 & 14 - 17
Y	US 5,596,709 A (BOND et al) 21 January 1997 - col. 7 lines 16 - 30.	2, 15 - 17, 19 - 26, 29 & 33 - 35
Y	US 6,018,778 A (STOLOWITZ) 25 January 2000 - col. 8, lines 18-29, fig. 7 fig. 2 & col. 11 lines 25-34.	3, 8 - 10, 14, 19 - 26, 29 & 33 - 35



Further documents are listed in the continuation of Box C.



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INTERNATIONAL SEARCH REPORT

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C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 6,269,427 B1 (KUTTANNA et al) 31 July 2001 - (18 March 1999).	1 - 35
A	US 6,282,671 B1 (ISLAM et al) 28 August 2001 - (10 November 1998).	1 - 35
X	US 5,603,004 A (KURPANEK et al) 11 February 1997 - Fig. 1, col. 1, lines 10-38	30
A	US 6,003,144 A (OLARIG et al) 14 December 1999 - (30 June 1997).	1 - 35

INTERNATIONAL SEARCH REPORT

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Continuation of B. FIELDS SEARCHED Item 3:

stripe same bit raid, cache near5, hardware register, benefit, advantage, disk near array, cache control, memory, partial, store write update, merg\$4, flag indicat\$3, bit vector, block segment.