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[Continued on next page]

(54) Title: SCHEDULING BY GROWING AND SHRINKING RESOURCE ALLOCATION

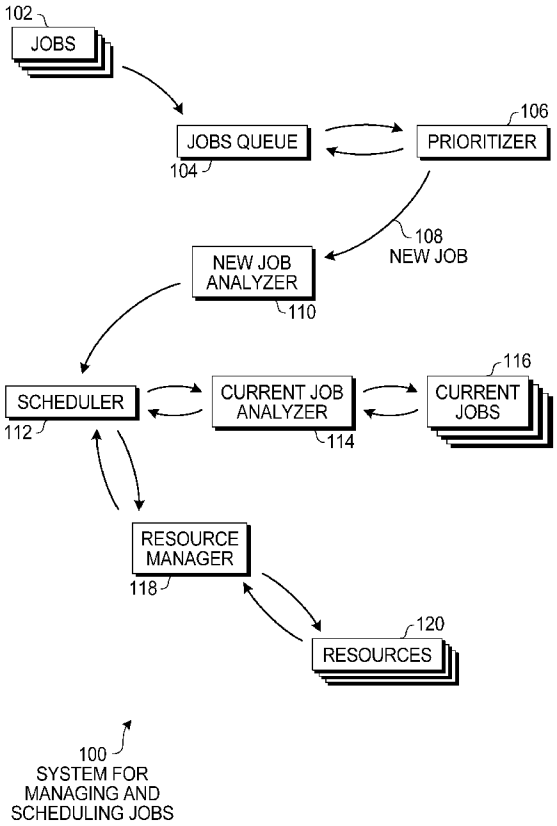

FIG. 1

(57) Abstract: A scheduler for computing resources may periodically analyze running jobs to determine if additional resources may be allocated to the job to help the job finish quicker and may also check if a minimum amount of resources is available to start a waiting job. A job may consist of many tasks that may be defined with parallel or serial relationships between the tasks. At various points during execution, the resource allocation of active jobs may be adjusted to add or remove resources in response to a priority system. A job may be started with a minimum amount of resources and the resources may be increased and decreased over the life of the job.

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NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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— *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER

G06F 9/46(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)

IPC : G06F

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 since 1975

Japanese Utility models and applications for utility models since 1975

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

eKIPASS(KIPO internal) "job", "allocate", "scheduling"

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y	Buisson, B. et al. Scheduling Malleable Applications in Multicluster Systems. CoreGRID Technical Report Number TR-0092. May 2007. See Abstract, Chapters 1, 2, 4, 5 and Figures 1-5.	1-3, 6-10, 14, 15 4, 5, 11-13, 16-20
Y	How the Compute Cluster Server Works. Microsoft · TechNet. June 2006. (http://technet.microsoft.com/en-us/library/cc720072.aspx). See Chapters "Terms and definitions", "Creating and submitting jobs"-"Run-time job and task management" and "Content format".	4, 5, 11-13, 16-20
A	US 5,031,089 A (LIU, H. T. et al.) 09 July 1991 See Abstract and Column 7, Line 22-Column 8, Line 61.	1-20
A	US 2002-0002578 A1 (YAMASHITA, K.) 03 January 2004 See Abstract, Paragraphs [0004-0111] and Figures 1-4.	1-20

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

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"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
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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
US 5,031,089 A	09.07.1991	None	
US 2002-0002578 A1	03.01.2002	JP 2002-007364 A US 7,024,671 B2	11.01.2002 04.04.2006