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(54) Title: CONCURRENCY IDENTIFICATION FOR PROCESSING OF MULTISTAGE WORKFLOWS

(57) Abstract: A system and method may be utilized to identify concurrency levels of processing stages in a distributed system, identify common resources and bottlenecks in the distributed system using the identified concurrency levels, and allocate resources in the distributed system using the identified concurrency levels.

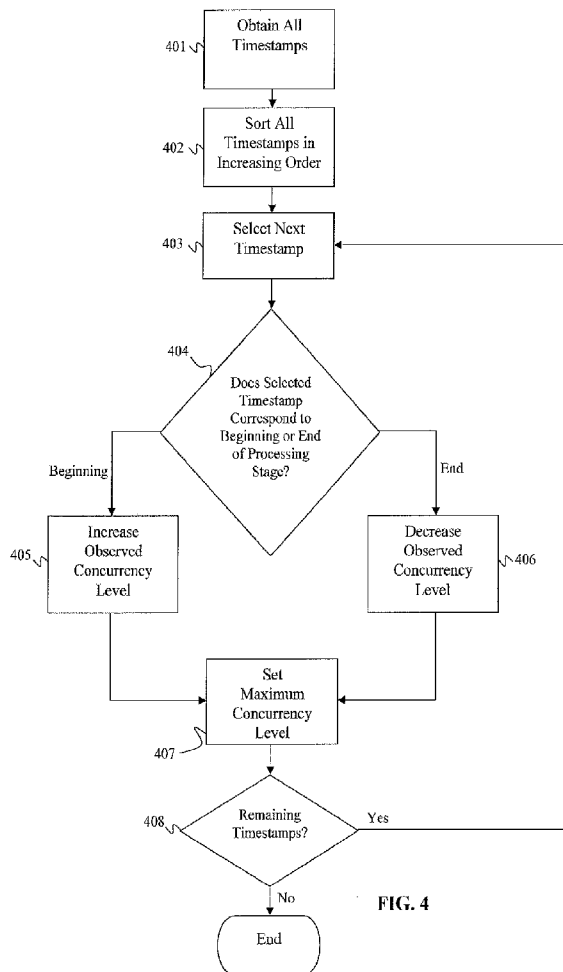


FIG. 4





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, 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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B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) IPC(8): G06F 9/50, 9/45, 9/44 (2014.01) USPC: 717/149, 151; 718/104; 709/201 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) MicroPatent (US-G, US-A, EP-A, EP-B, WO, JP-bib, DE-C,B, DE-A, DE-T, DE-U, GB-A, FR-A); ProQuest; IEEE; Google/Google Scholar Keywords: parallel, concurrent, processor, timestamp, resources, bottleneck, identify, maximum concurrency, task, job		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2012/0011515 A1, (JOLFAEI, M. et al.), 12 January 2012; claim 17, paragraphs [0002], [0027], [0028], [0039].	1-3, 5-14, 16-22
Y	US 2011/0258323 A1, (JACKSON, D.), 20 October 2011; claims 14, 15, 17, paragraphs [0027], [0032], [0071], [0079], [0081], [0083], [0085], [0086], [0091].	1-3, 5-14, 16-22
Y	WO 2006/042153 A2, (POWERS, J. et al.), 20 April 2006; paragraphs [0064], [0065].	3, 14
Y	US 2007/0091088 A1, (JIAO, Y. et al.), 26 April 2007; paragraphs [0029], [0047], [0057], [0073], [0075].	5-6, 10, 16-17, 21
Y	US 2011/0161582 A1, (VOLOBUEV, Y.), 30 June 2011; paragraphs [0009], [0028], [0049].	6, 17
Y	US 2011/0289503 A1, (TOUB, S. et al.), 24 November 2011; paragraphs [0034], [0035].	7-9, 11, 18-20, 22
Y	US 2010/0005468 A1, (CHANG, R. et al.), 07 January 2010; paragraph [0041].	7-8, 18-19
Y	US 6,549,930 B1, (CHRYSOS, G. et al.), 15 April 2003; column 16, lines 55-61, column 18, lines 49-53, column 20, lines 44-47, column 22, lines 20-25.	9, 20
Y	US 2008/0034370 A1, (HUIZENGA, G.), 07 February 2008; claim 28, paragraphs [0022], [0023], [0035].	10, 21
A	US 8230426 B2, (POWERS, J. et al), 24 July 2012; claim 1.	4, 15
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Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201		Authorized officer: Shane Thomas PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774