



(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
18.10.2023 Bulletin 2023/42

(51) International Patent Classification (IPC):
G06F 9/50 (2006.01) G06F 9/54 (2006.01)

(43) Date of publication A2:
04.10.2023 Bulletin 2023/40

(52) Cooperative Patent Classification (CPC):
G06F 9/5033; G06F 9/5077; G06F 9/546;
G06F 2209/5018; G06F 2209/548; Y02D 10/00

(21) Application number: **23192705.4**

(22) Date of filing: **22.09.2020**

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

(72) Inventors:
• **BANG, Tiemo**
69190 Walldorf (DE)
• **MAY, Norman**
69190 Walldorf (DE)
• **OUKID, Ismail**
69190 Walldorf (DE)
• **BINNIG, Carsten**
69190 Walldorf (DE)

(30) Priority: **12.12.2019 US 201916712728**

(62) Document number(s) of the earlier application(s) in accordance with Art. 76 EPC:
20197496.1 / 3 835 956

(74) Representative: **Müller-Boré & Partner**
Patentanwälte PartG mbB
Friedenheimer Brücke 21
80639 München (DE)

(71) Applicant: **SAP SE**
69190 Walldorf (DE)

(54) **DATA STRUCTURE EXECUTION FRAMEWORK USING VIRTUAL COMPUTING DOMAINS**

(57) A computer-implemented method, a computing system and one or more computer-readable storage media are provided. The computer-implemented method comprises determining an amount of computing resource in a computing environment, the computing resources comprises a plurality of processor sockets, each processor socket comprising one or more processing cores, each processing core comprising one or more processing threads. The method further comprises allocating a first plurality of processing threads of the computing resources to a first virtual domain. The method further comprises allocating a second plurality of processing threads of the computing resources to a second virtual domain. The method further comprises instantiating a first data structure in the first virtual domain. The method further comprises instantiating a second data structure in the second virtual domain. The method further comprises generating a domain map, the domain map comprising identifiers of virtual domains in the computing environment and data structures instantiated in a given virtual domain, the domain map comprising an identifier of the first virtual domain and an indicator that the first data structure is located in the first virtual domain, the domain map further comprising an identifier of the second virtual domain and an indicator that the second data structure is located in the second virtual domain. The method further comprises receiving a task comprising one or more operations to be performed on the first data structure. The method fur-

ther comprises determining using the domain map that the first data structure is located in the first virtual domain. The method further comprises sending the task to the first virtual domain; executing the task using the first data structure; and providing task execution results resulting from the executing the task.

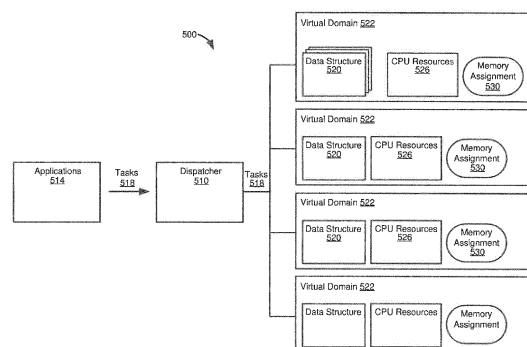


FIG. 5



EUROPEAN SEARCH REPORT

Application Number

EP 23 19 2705

5

10

15

20

25

30

35

40

45

50

55

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 2016/092263 A1 (GLEYZER GENE [US] ET AL) 31 March 2016 (2016-03-31) * paragraph [0026]; figure 1 * * paragraphs [0029] - [0042], [0049] - [0052] *	1-8, 10, 12-15	INV. G06F9/50 G06F9/54
X	EP 3 163 442 A1 (GUBERNET INC [KR]) 3 May 2017 (2017-05-03) * paragraph [0034]; figures 1-3 * * paragraphs [0077] - [0086]; figures 11-12 * * paragraphs [0087] - [0097]; figure 13 * * paragraphs [0100] - [0111], [0118] - [0119]; figure 17 * * figure 7 *	1, 9, 11, 14, 15	
			TECHNICAL FIELDS SEARCHED (IPC)
			G06F
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
The Hague		6 September 2023	Cattrysse, Tom
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

1
EPO FORM 1503 03:82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.

EP 23 19 2705

5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

06-09-2023

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2016092263 A1	31-03-2016	CN 106716367 A	24-05-2017
		EP 3198430 A1	02-08-2017
		JP 6613305 B2	27-11-2019
		JP 2017533502 A	09-11-2017
		US 2016092263 A1	31-03-2016
		US 2016092268 A1	31-03-2016
		US 2018210753 A1	26-07-2018

EP 3163442 A1	03-05-2017	CN 105900063 A	24-08-2016
		EP 3163442 A1	03-05-2017
		JP 2017521806 A	03-08-2017
		KR 101583325 B1	07-01-2016
		US 2016283283 A1	29-09-2016

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82