



- (51) **International Patent Classification:**  
*G06F 9/44* (2006.01)      *G06F 11/30* (2006.01)
- (21) **International Application Number:**  
PCT/US201 1/065706
- (22) **International Filing Date:**  
19 December 2011 (19.12.2011)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**  
12/972,531 20 December 2010 (20.12.2010) US
- (71) **Applicant (for all designated States except US):** **MI-CROSOFT CORPORATION** [US/US]; One Microsoft Way, Redmond, Washington 98052-6399 (US).
- (72) **Inventors:** **BARHAM, Paul**; c/o Microsoft Corporation, LCA - International Patents, One Microsoft Way, Redmond, Washington 98052-6399 (US). **FIGUEROA, Joseph N.**; c/o Microsoft Corporation, LCA - International Patents, One Microsoft Way, Redmond, Washington 98052-6399 (US). **SPRADLIN, Jeremiah C**; c/o Microsoft Corporation, LCA - International Patents, One Microsoft Way, Redmond, Washington 98052-6399 (US).
- (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, 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, KM, 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, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, 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.

(84) **Designated States (unless otherwise indicated, for every kind of regional protection available):** ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Declarations under Rule 4.17:**

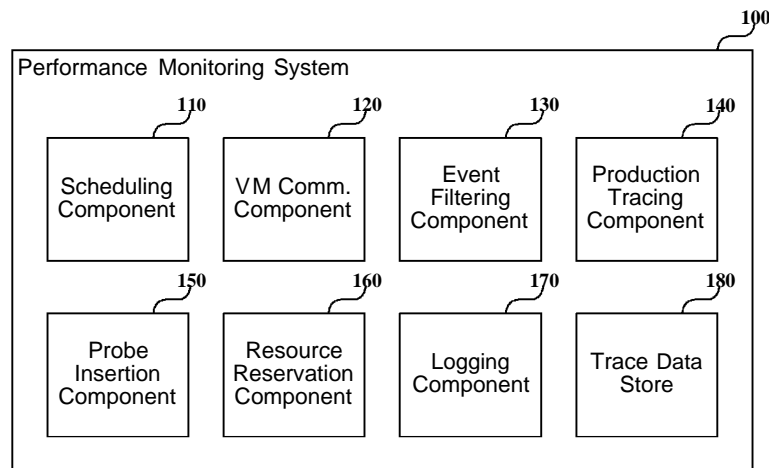
- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(H))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(in))

**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 nextpage]

(54) **Title:** PROBE INSERTION VIA BACKGROUND VIRTUAL MACHINE



**FIG. 1**

(57) **Abstract:** A performance monitoring system is described herein that works with a hypervisor to reserve resources outside of a virtual machine to monitor performance of an application running within the virtual machine. The application receives the guaranteed amount of resources specified by the virtual machine's specifications, and the monitoring consumes resources not associated with the virtual machine. The application running in the virtual machine is already isolated by the hypervisor from the physical machine, and thus additional burdens on the physical machine that allow the hypervisor to continue meeting guarantees to the virtual machine will not impact application performance. The performance monitoring system provides instrumentation of deployed applications that information technology (IT) personnel can dynamically turn on and off without affecting the performance of the deployed application. The performance monitoring system provides a robust framework for monitoring production applications without affecting the performance of those applications during execution.



(88) Date of publication of the international search report:

1 November 2012

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US2011/065706**A. CLASSIFICATION OF SUBJECT MATTER****G06F 9/44(2006.01)i, G06F 11/30(2006.01)1**

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 9/44; G06F 7/00; G06F 9/455; G06F 9/45

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) &amp; Keywords: outside performance track virtual machine

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2009-0024994 AI (KANNAN RAJA et al.) 22 January 2009 See abstract, paragraphs [0003], [0012]-[0015], [0057M0060], claim 1, and figures 2-3.	1-15
A	QS 2004-0267691 AI (VASUDEVA VIVEK) 30 December 2004 See abstract and paragraphs [0038]-[0039].	1-15
A	US 7590521 B2 (MA KENNETH KAI-BAUN et al.) 15 September 2009 See abstract and columns 1, 5-6.	1-15
A	US 7661095 B2 (GEORGE JINI SQSAN) 09 February 2010 See abstract and column 4, lines 42-46 and 65-68.	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 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

"&amp;" document member of the same patent family

Date of the actual completion of the international search

06 SEPTEMBER 2012 (06.09.2012)

Date of mailing of the international search report

**10 SEPTEMBER 2012 (10.09.2012)**

Name and mailing address of the ISA/KR

Korean Intellectual Property Office  
189 Cheongsu-ro, Seo-gu, Daejeon Metropolitan  
City, 302-701, Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

Lee Da Na

Telephone No. -



**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No.

**PCT/US2011/065706**

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2009-0024994 A1	22 .0 1.2009	US 8209684 B2 wo 2009-014493 A1 wo 2009-014495 A1	26.06.2012 29.01.2009 29.01.2009
US 2004-0267691 A1	30 .12 .2004	US 7568025 B2 wo 2005-006115 A2 wo 2005-006115 A3	28.07.2009 20.01.2005 16.02.2006
US 7590521 B2	15 .09 .2009	EP 1589429 A2 EP 1589429 A3 JP 2005-302028 A KR 10-2006-0045568 A US 2005-0229165 A1	26.10.2005 04.06.2008 27.10.2005 17.05.2006 13.10.2005
US 7661095 B2	09 .02 .2010	US 2006-0236309 A1	19.10.2006