(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date 2 February 2006 (02.02.2006)

(51) International Patent Classification: G06F 1/00 (2006.01)

(21) International Application Number:

PCT/US2005/022227

(22) International Filing Date: 21 June 2005 (21.06.2005)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data: 10/881,602

29 June 2004 (29.06.2004)

- (71) Applicant (for all designated States except US): INTEL CORPORATION [US/US]: 2200 Mission College Boulevard, Santa Clara, CA 95052 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): BRICKELL, Ernie, F. [US/US]; 3106 NW Luray Terrace, Portland, OR 97210 (US). HALL, Clifford, D. [US/US]; 6940 Eastside Ct., Orangevale, CA 95662 (US). CIHULA, Joseph, F. [US/US]; 2479 NE Nicki Ct., Hillsboro, OR 97124 (US). UHLIG,

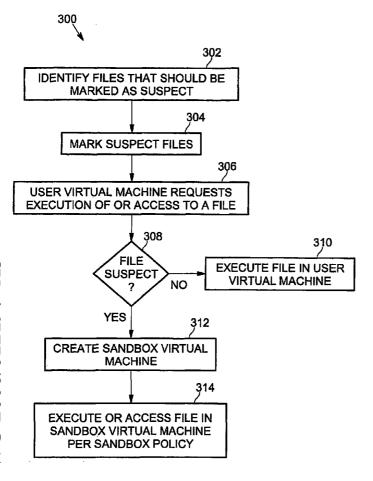
(10) International Publication Number WO 2006/012197 A3

Richard [US/US]; 1564 NE Orenco Station Parkway, Hillsoboro, OR 97124 (US).

- (74) Agents: VINCENT, Lester, J. et al.; Blakely, Sokoloff, Taylor & Zafman LLP, 7th floor, 12400 Wilshire Boulevard, Los Angeles, CA 90025 (US).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,

[Continued on next page]

(54) Title: METHOD OF IMPROVING COMPUTER SECURITY THROUGH SANDBOXING



(57) Abstract: Improving security of a processing system may be accomplished by at least one of executing and accessing a suspect file in a sandbox virtual machine.

WO 2006/012197 A3



FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

with international search report

(88) Date of publication of the international search report: 6 April 2006

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

Interior and Application No PC1/US2005/022227

A. CLASSIFICATION OF SUBJECT MATTER G06F1/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

 $\begin{tabular}{ll} \begin{tabular}{ll} Minimum documentation searched (classification system followed by classification symbols) \\ \begin{tabular}{ll} G06F \end{tabular}$

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 practical, search terms used)

EPO-Internal

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Х	US 5 974 549 A (GOLAN ET AL) 26 October 1999 (1999-10-26)	2-9,11, 15-22, 24, 28-31, 36-38
Y	the whole document	10,12, 13,23, 25,26, 32-35,39
X	US 2003/229794 A1 (SUTTON JAMES A ET AL) 11 December 2003 (2003-12-11)	1,14,27
Υ	paragraph '0023! - paragraph '0025!; figure 2	10,12, 13,23, 25,26, 32-35,39
	-/	

X Further documents are listed in the continuation of box C.	Patent family members are listed in 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 document but published on or after the international filling date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another 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 filling 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. "&" document member of the same patent family
Date of the actual completion of the international search	Date of mailing of the international search report
16 December 2005	04/01/2006
Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Meis, M

INTERNATIONAL SEARCH REPORT

Interreponal Application No PCT/US2005/022227

A M BORGSMILLER: "RE: A Windows NT question" of horizon when appropriate, of the relevant passages A M BORGSMILLER: "RE: A Windows NT question" online! 15 July 2002 (2002-07-15), XP002359662 The Gang List Retrieved from the Internet: URL: http://web.archive.org/web/20020715212 819/http://wigner.cped.ornl.gov/the-gang/0 286.html" retrieved on 2005-12-16! page 2, paragraph 6 A STERBENZ A: "An evaluation of the Java security model" COMPUTE SECURITY APPLICATIONS CONFERENCE, 1996. 12TH ANNUAL SAN DIEGO, CA, USA 9-13 DEC. 1996. 10S ALAMITOS, CA, USA, IEEE COMPUT. SOC, US, 9 December 1996 (1996-12-09), pages 2-14, XP010213036 ISBN: 0-8186-7506-X the whole document A EP 1 130 499 A (NEC CORPORATION) 1-39 EP 1 130 499 A (NEC CORPORATION) 1-39 The security is and Anti-vandal protection" VOID, 'Online! 1 February 1998 (1998-02-01), XP002243883 page 6, paragraph 2	C (Canalina)	OHOD DOCUMENTS CONCIDEDED TO BE BELEVANT	FC1/032005/02222/
question"'Online! 15 July 2002 (2002-07-15), XP002359662 The Gang List Retrieved from the Internet: URL:http://web.archive.org/web/20020715212 819/http://wigner.cped.ornl.gov/the-gang/0 286.html> 'retrieved on 2005-12-16! page 2, paragraph 6 A STERBENZ A: "An evaluation of the Java security model" COMPUTER SECURITY APPLICATIONS CONFERENCE, 1996., 12TH ANNUAL SAN DIEGO, CA, USA 9-13 DEC. 1996, LOS ALAMITOS, CA, USA,IEEE COMPUT. SOC, US, 9 December 1996 (1996-12-09), pages 2-14, XP010213036 ISBN: 0-8186-7606-X the whole document A EP 1 130 499 A (NEC CORPORATION) 5 September 2001 (2001-09-05) the whole document A "Gateway Anti-virus and Anti-vandal protection" VOID, 'Online! 1 February 1998 (1998-02-01), XP002243883			Relevant to claim No.
A STERBENZ A: "An evaluation of the Java security model" COMPUTER SECURITY APPLICATIONS CONFERENCE, 1996., 12TH ANNUAL SAN DIEGO, CA, USA 9-13 DEC. 1996, LOS ALAMITOS, CA, USA, IEEE COMPUT. SOC, US, 9 December 1996 (1996-12-09), pages 2-14, XP010213036 ISBN: 0-8186-7606-X the whole document A EP 1 130 499 A (NEC CORPORATION) 5 September 2001 (2001-09-05) the whole document A "Gateway Anti-virus and Anti-vandal protection" VOID, 'Online! 1 February 1998 (1998-02-01), XP002243883	A	question"'Online! 15 July 2002 (2002-07-15), XP002359662 The Gang List Retrieved from the Internet: URL:http://web.archive.org/web/20020715212 819/http://wigner.cped.ornl.gov/the-gang/0	1-39
5 September 2001 (2001-09-05) the whole document A "Gateway Anti-virus and Anti-vandal protection" VOID, 'Online! 1 February 1998 (1998-02-01), XP002243883	А	STERBENZ A: "An evaluation of the Java security model" COMPUTER SECURITY APPLICATIONS CONFERENCE, 1996., 12TH ANNUAL SAN DIEGO, CA, USA 9-13 DEC. 1996, LOS ALAMITOS, CA, USA, IEEE COMPUT. SOC, US, 9 December 1996 (1996-12-09), pages 2-14, XP010213036 ISBN: 0-8186-7606-X	1-39
protection" VOID, 'Online! 1 February 1998 (1998-02-01), XP002243883	Α	5 September 2001 (2001-09-05)	1-39
	A	protection" VOID, 'Online! 1 February 1998 (1998-02-01), XP002243883	1-39

INTERNATIONAL SEARCH REPORT

formation on patent family members

International Application No
PC17US2005/022227

Patent document cited in search report		Publication date	Patent family member(s)		Publication date	
US 5974549	Α	26-10-1999	NONE	-		
US 2003229794	A1	11-12-2003	AU CN EP JP WO	2003231237 1675623 1512074 2005529401 03104981	A A2 T	22-12-2003 28-09-2005 09-03-2005 29-09-2005 18-12-2003
EP 1130499	A	O5-09-2001	JP	2001195247	Α	19-07-2001