



- (51) **International Patent Classification:**
H04L 12/12 (2006.01) *G06F 15/16* (2006.01)
- (21) **International Application Number:**
PCT/US2012/021463
- (22) **International Filing Date:**
17 January 2012 (17.01.2012)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
13/013,661 25 January 2011 (25.01.2011) US
- (71) **Applicant (for all designated States except US):** MICROSOFT CORPORATION [US/US]; One Microsoft Way, Redmond, Washington 98052-6399 (US).
- (72) **Inventors:** LOVINGER, Dan; c/o Microsoft Corporation, LCA - International Patents, One Microsoft Way, Redmond, Washington 98052-6399 (US). KYLASAM, Sharad; c/o Microsoft Corporation, LCA - International Patents, One Microsoft Way, Redmond, Washington 98052-6399 (US). KUMAR, Richa; c/o Microsoft Corporation, LCA - International Patents, One Microsoft Way, Redmond, Washington 98052-6399 (US). CADENA, Jairo; c/o Microsoft Corporation, LCA - International Patents, One Microsoft Way, Redmond, Washington 98052-6399 (US). UNNIKRISHNAN, Mahesh; c/o Microsoft Corporation, LCA - International Patents, One Microsoft Way, Redmond, Washington 98052-6399 (US). KADAM, Manoj; c/o Microsoft Corporation, LCA - International Patents, One Microsoft Way, Redmond, Washington 98052-6399 (US). PRASAD, Ganesh; c/o Microsoft Cor-

poration, 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(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

Published:

- with international search report (Art. 21(3))

[Continued on next page]

(54) **Title:** SITE-AWARE DISTRIBUTED FILE SYSTEM ACCESS FROM OUTSIDE ENTERPRISE NETWORK

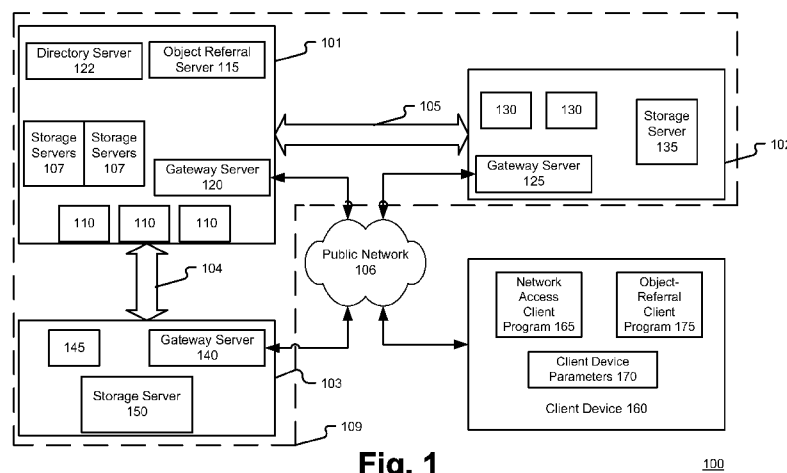


Fig. 1

(57) **Abstract:** Embodiments are directed to permitting client devices that connect remotely to an enterprise network to operate in a site-aware manner. In distributed file systems, files may be replicated in multiple places across a network. Embodiments are directed to providing requesting clients referrals (or paths) to replicas of desired information that are accessible by the requesting client with the least overall "cost" to the client and the network. The present systems and methods allow remote client devices to reliably identify a site with their referral requests so that the referring server(s) may provide site-aware referrals in response to the requests.



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

3 January 2013

A. CLASSIFICATION OF SUBJECT MATTER***H04L 12/12(2006.01)i, G06F 15/16(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)

H04L 12/12; G06F 17/30; G06F 12/00

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) & Keywords: client device, enterprise network, site-aware manner, distributed file system, gateway server, site identifier, object-referral server, referral request, object and similar terms.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2006-0085428 A1 (PATRICK BOZEMAN et al.) 20 April 2006 See abstract, paragraphs [38]-[42], [49]-[53], [79]-[87], claims 1, 3, 7, 15 and figures 2, 4, 7.	1-15
A	US 6477522 B1 (YOUNG; BRUCE A.) 05 November 2002 See abstract, column 4, line 8 - column 5, line 9, claims 1, 7, 11 and figure 2.	1-15
A	US 2007-0088669 A1 (BOAZ JASCHEK et al.) 19 April 2007 See abstract, paragraphs [42]-[53], claims 1, 2, 10 and figure 1.	1-15
A	US 2007-0168405 A1 (ORI POMERANTZ) 19 July 2007 See abstract, paragraphs [23], [29]-[32], claims 1, 7 and figures 3-5.	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

"&" document member of the same patent family

Date of the actual completion of the international search

27 AUGUST 2012 (27.08.2012)

Date of mailing of the international search report

28 AUGUST 2012 (28.08.2012)

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

KIM Dae Sung

Telephone No. 82-42-481-8237



INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2012/021463

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2006-0085428 A1	20.04.2006	AU 2005-209584 A1 AU 2005-209584 B2 BR P10504255A CN 100481074 C CN 1755692 A CN 1755692 C0 C05730017A1 EG24247A EP 1643393 A2 EP 1643393 A3 IL 170667A JP 2006-107506 A KR 10-1153087 B1 MX PA05010438A MY142877A N020054098A N020054098D0 NZ542145A RU 2005130414 A SG121092A1 US 7584220 B2	27.04.2006 04.11.2010 16.05.2006 22.04.2009 05.04.2006 05.04.2006 28.02.2007 23.11.2008 05.04.2006 17.01.2007 28.02.2011 20.04.2006 04.06.2012 24.04.2006 31.01.2011 03.04.2006 02.09.2005 31.05.2007 10.04.2007 26.04.2006 01.09.2009
US 6477522 B1	05.11.2002	AU 2000-57906 A1 AU 5790600 A WO 00-77637 A1	02.01.2001 02.01.2001 21.12.2000
US 2007-0088669 A1	19.04.2007	US 7499905 B2	03.03.2009
US 2007-0168405 A1	19.07.2007	CN 101035138 A CN 101035138 B CN 101035138 C0	12.09.2007 10.11.2010 12.09.2007