

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
7 March 2002 (07.03.2002)

PCT

(10) International Publication Number
WO 02/019652 A3

(51) International Patent Classification⁷: H04L 29/12, G06F 17/30

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW.

(21) International Application Number: PCT/US01/26799

(22) International Filing Date: 28 August 2001 (28.08.2001)

(25) Filing Language: English

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(26) Publication Language: English

(30) Priority Data: 60/228,597 28 August 2000 (28.08.2000) US

(71) Applicants and

Published:

(72) Inventors: VENKATARAMAIAH, Ramesh [IN/US]; 5312 Carnaby Street #241, Irving, TX 75038 (US). HAROLD, Michael, D. [US/US]; 1119 Janther Place, Shreveport, LA 71104 (US).

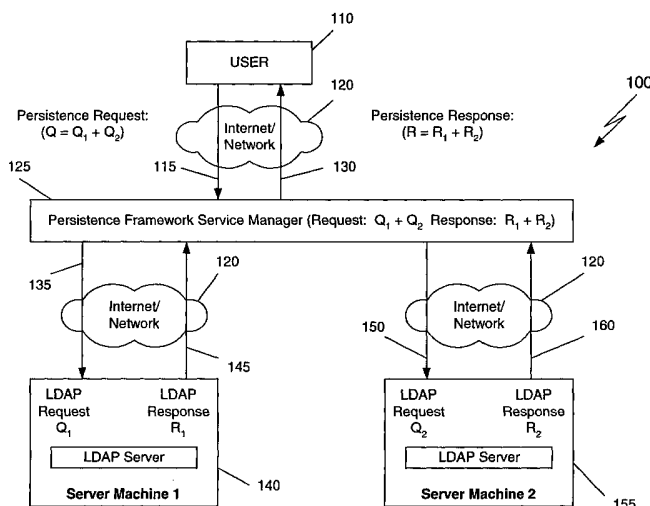
— with international search report

(88) Date of publication of the international search report: 16 January 2003

(74) Agents: VAN DYKE, Raymond et al.; Dorsey & Whitney LLP, 1001 Pennsylvania Avenue, N.W., Suite 300 South, Washington, DC 20004 (US).

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.

(54) Title: SYSTEM AND METHOD FOR TRANSMITTING AND RETRIEVING DATA VIA A DISTRIBUTED PERSISTENCE FRAMEWORK



(57) Abstract: A method, system and apparatus allowing data processing among multiple physical locations using Lightweight Directory Access Protocol-enabled databases, effectigely transforming multiple directory servers into a single logical database. The method, systemand apparatus creates a dynamic, distributed database environment for prcesomg complex data types, including data schemas, data documents and software objects. The distributed database environment is accessed either locally or remotely using a simple set of application programming interfaces, which include insert, update, delete and query capabilities. The persistence service supports commit and rollback protocols in a distributedf transaction environment.

WO 02/019652 A3

INTERNATIONAL SEARCH REPORT

International Application No
PCT/US 01/26799

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H04L29/12 G06F17/30

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)
IPC 7 H04L G06F

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, WPI Data, PAJ, IBM-TDB

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	RAJASEKAR A ET AL: "Collection-based persistent archives" MASS STORAGE SYSTEMS, 1999. 16TH IEEE SYMPOSIUM ON SAN DIEGO, CA, USA 15-18 MARCH 1999, PISCATAWAY, NJ, USA, IEEE, US, 15 March 1999 (1999-03-15), pages 176-184, XP010376277 ISBN: 0-7695-0204-0	1-4, 6-14, 16, 17
Y	abstract pag 176, col 2 lines 5-18 pag 177, col 2, line 29 - pag 178, col 1, line 2 pag 179	5, 15

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 filing 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 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

2 August 2002

Date of mailing of the international search report

16/08/2002

Name and mailing address of the ISA
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

Authorized officer

Bertolissi, E

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 01/26799

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 634 053 A (NOBLE WILLIAM B ET AL) 27 May 1997 (1997-05-27) abstract column 6, line 25 - line 55 ----	1,2,16, 17
Y	EP 0 567 999 A (ORACLE CORP) 3 November 1993 (1993-11-03) abstract ----	15
Y	TODD SUNDSTED : "JNDI overview, Part 1: An introduction to naming services " JAVA WORLD, 'Online! January 2000 (2000-01), XP002194387 Retrieved from the Internet: <URL:http://www.javaworld.com/javaworld/jw -01-2000/jw-01-howto_p.html> 'retrieved on 2002-03-26! the whole document ----	5
A	SUN MICROSYSTEMS INC: "Java Naming and Directory Interface Application Programming Interface (JNDI API)" SUN MICROSYSTEMS TECHNICAL DOCUMENTATION, 'Online! 14 July 1999 (1999-07-14), XP002194388 Retrieved from the Internet: <URL:ftp://ftp.java.sun.com/docs/j2se1.3/j ndi.pdf> 'retrieved on 2002-03-26! Chapter 4 ----	1-17
O,X	SIHEM AMER-YAHIA : "Distributed Query Evaluation in LDAP Directories" TALK AT THE DATABASE RESEARCH DEPARTMENT AT AT&T RESEARCH-LABS, 'Online! 2 February 2000 (2000-02-02), XP002194389 Retrieved from the Internet: <URL:http://www.research.att.com/{sihem/di st.ps}> 'retrieved on 2002-03-26! page 13 -page 17 ----	1-4,7, 9-13,16, 17
T	SIHEM AMER-YAHIA, DIVESH SRIVASTAVA, DAN SUCIU: "Distributed Query Evaluation in LDAP Directories" REVISED FOR TKDE (2002), 'Online! 26 March 2002 (2002-03-26), XP002194390 Retrieved from the Internet: <URL:http://www.research.att.com/{sihem/TK DE02.ps}> 'retrieved on 2002-03-26! Sections 2 and 3 -----	1-4,7, 9-13,16, 17

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No PCT/US 01/26799

Patent document cited in search report	Publication date	Patent family member(s)	Publication date																		
US 5634053	A	27-05-1997	NONE																		
EP 0567999	A	03-11-1993	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">US</td> <td style="width: 35%;">5452445 A</td> <td style="width: 50%;">19-09-1995</td> </tr> <tr> <td>AT</td> <td>184121 T</td> <td>15-09-1999</td> </tr> <tr> <td>DE</td> <td>69326186 D1</td> <td>07-10-1999</td> </tr> <tr> <td>DE</td> <td>69326186 T2</td> <td>27-04-2000</td> </tr> <tr> <td>EP</td> <td>0567999 A2</td> <td>03-11-1993</td> </tr> <tr> <td>JP</td> <td>6318164 A</td> <td>15-11-1994</td> </tr> </table>	US	5452445 A	19-09-1995	AT	184121 T	15-09-1999	DE	69326186 D1	07-10-1999	DE	69326186 T2	27-04-2000	EP	0567999 A2	03-11-1993	JP	6318164 A	15-11-1994
US	5452445 A	19-09-1995																			
AT	184121 T	15-09-1999																			
DE	69326186 D1	07-10-1999																			
DE	69326186 T2	27-04-2000																			
EP	0567999 A2	03-11-1993																			
JP	6318164 A	15-11-1994																			