

(12) United States Patent

### (10) Patent No.: US 6,363,409 B1 (45) Date of Patent: \*Mar. 26, 2002

### Hart et al.

### (54) AUTOMATIC CLIENT/SERVER TRANSLATION AND EXECUTION OF NON-NATIVE APPLICATIONS

- (75) Inventors: David L. Hart; Nanduri R. V. Ramakrishna, both of Redmond, WA (US)
- (73) Assignee: Microsoft Corporation, Redmond, WA (US)
- (\*) Notice: This patent issued on a continued prosecution application filed under 37 CFR 1.53(d), and is subject to the twenty year patent term provisions of 35 U.S.C. 154(a)(2).

Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

- (21) Appl. No.: 08/427,949
- (22) Filed: Apr. 24, 1995
- (51) Int. Cl.<sup>7</sup> ...... G06F 9/54

### (56) References Cited

DOCKF

### U.S. PATENT DOCUMENTS

5,305,461 A	*	4/1994	Feigenbaum et al 395/775
5,487,158 A	*	1/1996	Amelina 395/375
5,490,256 A	*	2/1996	Mooney et al 395/375
5,517,193 A	*	5/1996	Allison et al 342/26
5,734,904 A		3/1998	Kanamori et al.

### OTHER PUBLICATIONS

Randall Kennedy, "Make Windows say WOW", Window Sources v2, n2, p305(2) 2/94.\*

Adrian King, "Windows, the next generation: an advance look at the architecture of Chicago", Microsoft System Journal v9,n1, p15(8), 1/94.\* Andrew Schulman, "At last—write bona fide 32 bit programs that run on Windows 3.1 using Win32s", Miscrosoft Systems, Journal, v8,n4, p15(16), 4/93.\*

Matt Pietrek, "Stepping up to 32 bits; Chicago's process, thread, and memory management", Microsoft Systems Journal, v9, n8, p27(13), 8/94.\*

Vendito et al, "A step ahead of the next generation", windows Sources, v2,n6,p110(13), 6/94.\*

Pietrek, Matt,; "intercepting API functions in Win32", PC Magazine, v13, #19, p307(6), Nov. 8, 1994.\*

Richter, Jeffrey; "Load your 32-bit DLL into another process space using INJLIB", Microsoft Systems Journal, v9, #5, p13(22), May 1994.\*

Peitrek, Matt, "Intercepting API Functions in Win32", PC Magazine, Nov. 8, 1994, v 13, #19, p. 307 (6).\*

Richter, Jeffrey, Load Your 32–bit DLL into another Process Space Using INJLIB, Microsoft Systems Journal, May 94 v9, #5, p. 13 (22).\*

Kennedy, "Make Windows Say WOW," Windows Sources, Feb. 1994, pp. 305–306.

Oney, "Mix 16-bit and 32-bit Code in Your Applications with the Win32s<sup>™</sup> Universal Thunk," *Microsoft Systems Journal*, Nov. 1993, pp. 39–45, 48, 50, 52, 54–59 (advertising pages omitted).

(List continued on next page.)

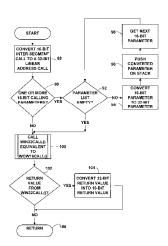
Primary Examiner-St. John Courtenay, III

(74) Attorney, Agent, or Firm-Klarquist Sparkman, LLP

#### (57) ABSTRACT

A system for client/server translation and execution of non-native applications. Service requests within non-native (e.g. 16-bit) applications are translated to call 32-bit equivalents within a native (e.g 32-bit) operating system. Both non-native and native server process share a library providing native program services. As a result of this translation, non-native applications are integrated into the native operating system, and can communicate and pass data to other non-native applications, and other native applications executing within the native client/server operating system.

### 26 Claims, 8 Drawing Sheets



Find authenticated court documents without watermarks at docketalarm.com.

### OTHER PUBLICATIONS

Penrod, "How Today's Apps Will Run Tomorrow 16 Into 32?" *Windows Sources,* Jan. 1995, pp. 138–141.

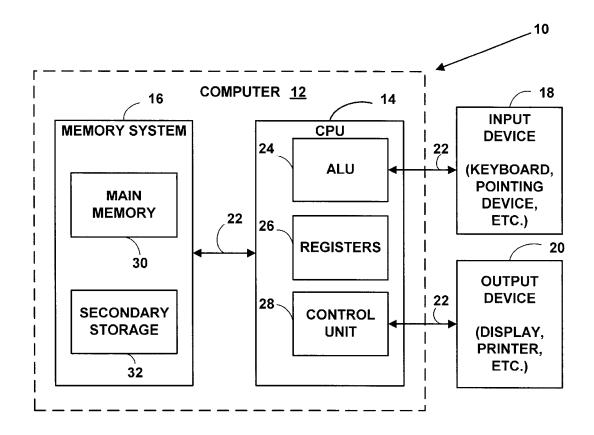
Finnegan, "Gluing WIN16 to Windows NT Gets Easier with Generic Thunk," *Microsoft Journal*, vol. 9, #4, Jun. 1994, 42 pages; with sidebar "A Quantum Leap," 6 pages.

Finnegan, "Test Drive Win32® from 16-bit Code Using Windows NT WOW Layer and Generic Thunk," *Microsoft Systems Journal*, vol. 9, #6, Jun. 1994, pp. 13–15, 17–20, 23–26, 28–36 (advertising pages omitted).

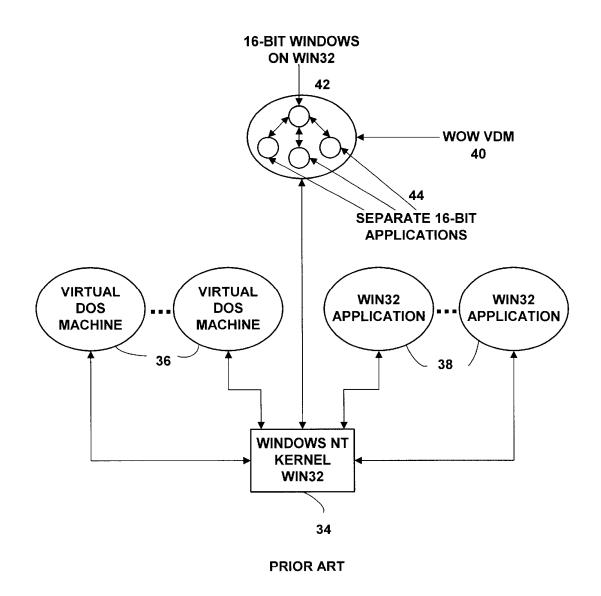
Custer, "Windows and the Protected Subsystems," *Inside Windows NT*, Chapter, 5, 1993 Microsoft Press, pp. 115–164.

\* cited by examiner

# **FIG.** 1



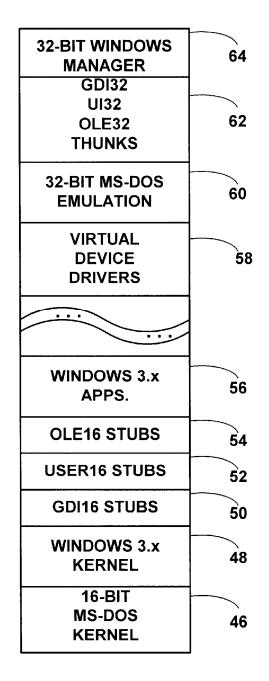
**FIG. 2** 



**DOCKET A L A R M** Find authenticated court documents without watermarks at <u>docketalarm.com</u>.

DOCKET

**FIG. 3** 



**PRIOR ART** 

A L A R M Find authenticated court documents without watermarks at <u>docketalarm.com</u>.

# DOCKET A L A R M



# Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

# **Real-Time Litigation Alerts**



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

# **Advanced Docket Research**



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

# **Analytics At Your Fingertips**



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

## API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

### LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

### FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

### E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.