

US007519814B2

(12) United States Patent

Rochette et al.

(54) SYSTEM FOR CONTAINERIZATION OF APPLICATION SETS

- (75) Inventors: Donn Rochette, Fenton, IA (US); Paul O'Leary, Kanata (CA); Dean Huffman, Kanata (CA)
- (73) Assignee: Trigence Corp., Ottawa (CA)
- (*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 933 days.
- (21) Appl. No.: 10/939,903
- (22) Filed: Sep. 13, 2004

(65) **Prior Publication Data**

US 2005/0060722 A1 Mar. 17, 2005

Related U.S. Application Data

- (60) Provisional application No. 60/512,103, filed on Oct.
 20, 2003, provisional application No. 60/502,619, filed on Sep. 15, 2003.
- (51) Int. Cl. *G06F 3/00* (2006.01)
- (52) **U.S. Cl.** **713/167**; 713/164; 709/248; 709/214; 719/319
- (58) Field of Classification Search 713/167; 719/319

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

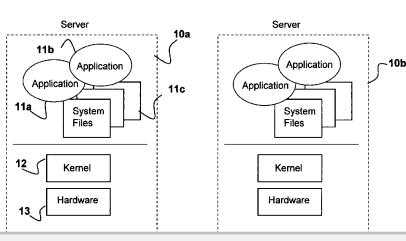
6,381,742 B2 * 4/2002 Forbes et al. 717/176

(Continued)

FOREIGN PATENT DOCUMENTS

WO WO 02/06941 A 1/2002

34 Claims, 17 Drawing Sheets



(10) Patent No.: US 7,519,814 B2 (45) Date of Patent: Apr. 14, 2009

• •

WO WO 2006/039181 A 4/2006

OTHER PUBLICATIONS

Soltesz, S., et al, 'Container-based Operating System Virtualization: A Scalable, High-performance Alternative to Hypervisors', SIGOPS Oper. Syst. Rev., vol. 41, No. 3. (Jun. 2007), pp. 275-287, entire article, http://delivery.acm.org/10.1145/ 1280000/1273025/p275-soltesz.pdf?key1=1273025& key2=0279528221&coll=GUIDE&dl=GUIDE& CFID=13091697&CFTOKEN=4667.*

Primary Examiner—Kambiz Zand Assistant Examiner—Ronald Baum (74) Attorney, Agent, or Firm—Allen, Dyer, Doppelt, Milbrath & Gilchrist, P.A.

(57) ABSTRACT

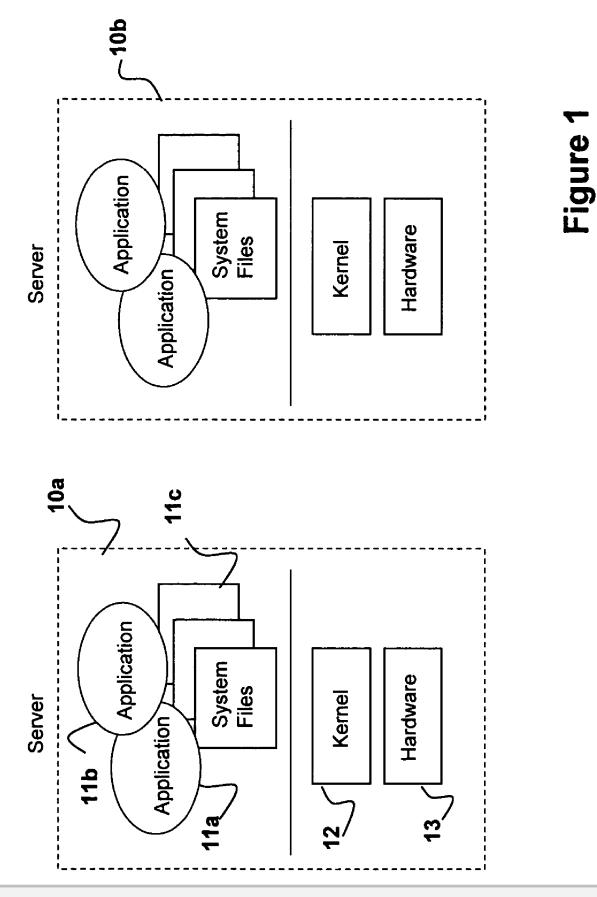
A system is disclosed having servers with operating systems that may differ, operating in disparate computing environments, wherein each server includes a processor and an operating system including a kernel a set of associated local system files compatible with the processor. This invention discloses a method of providing at least some of the servers in the system with secure, executable, applications related to a service, wherein the applications may be executed in a secure environment, wherein the applications each include an object executable by at least some of the different operating systems for performing a task related to the service. The method of this invention requires storing in memory accessible to at least some of the servers a plurality of secure containers of application software. Each container includes one or more of the executable applications and a set of associated system files required to execute the one or more applications, for use with a local kernel residing permanently on one of the servers. The set of associated system files are compatible with a local kernel of at least some of the plurality of different operating systems. The containers of application software exclude a kernel; and some or all of the associated system files within a container stored in memory are utilized in place of the associated local system files resident on the server.

U.S. PATENT DOCUMENTS

6,847,970	B2 *	1/2005	Keller et al 7	07/100
7,076,784	B1 *	7/2006	Russell et al 7	19/315
7,287,259	B2 *	10/2007	Grier et al 7	19/331

2002/0004854	A1	1/2002	Hartley	
2002/0174215	A1	11/2002	Schaefer	 709/224
2003/0101292	A1	5/2003	Fisher	

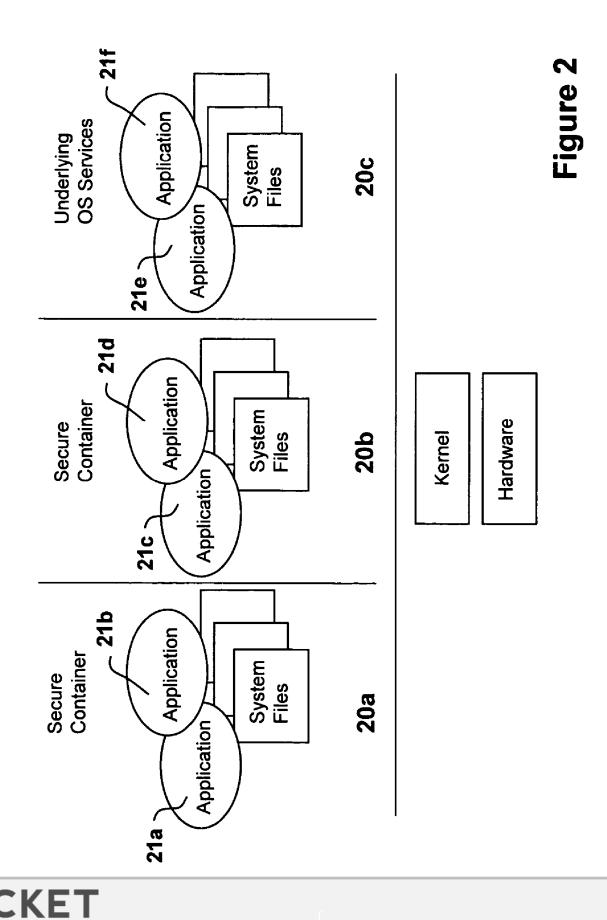
* cited by examiner



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

 \mathbf{D}

Α



Α

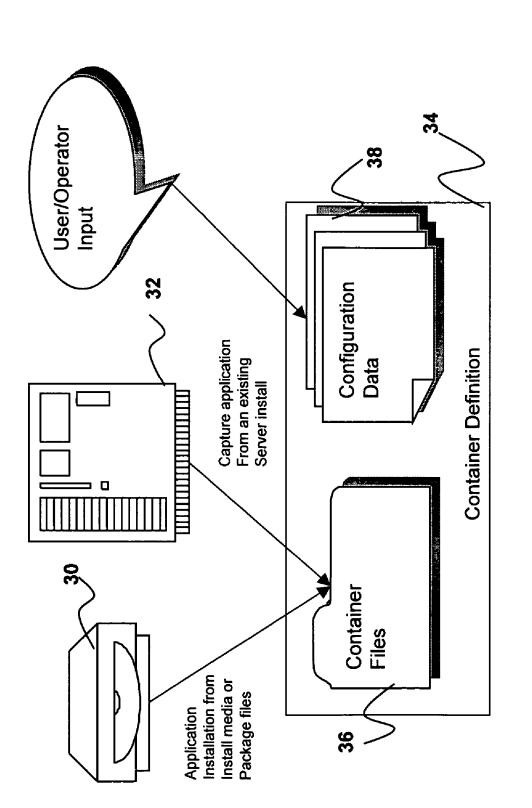


Figure 3

DCKET LARM 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.