

(12) United States Patent

Touboul

US 6,480,962 B1 (10) Patent No.: *Nov. 12, 2002

(45) Date of Patent:

(54) SYSTEM AND METHOD FOR PROTECTING A CLIENT DURING RUNTIME FROM HOSTILE DOWNLOADABLES

(75) Inventor: Shlomo Touboul, Kefar-Haim (IL)

Assignee: Finjan Software, Ltd., Kefar-Haim

Subject to any disclaimer, the term of this (*) Notice:

patent is extended or adjusted under 35

U.S.C. 154(b) by 0 days.

This patent is subject to a terminal dis-

claimer.

(21) Appl. No.: 09/551,302

(22) Filed: Apr. 18, 2000

Related U.S. Application Data

(63)Continuation of application No. 08/790,097, filed on Jan. 29,

(60)Provisional application No. 60/030,639, filed on Nov. 8,

(51)

(52)Field of Search 713/200, 201, (58)

713/202; 714/38, 704; 709/225, 229

(56)References Cited

U.S. PATENT DOCUMENTS

5,077,677 A	12/1991	Murphy et al.
5,359,659 A	10/1994	Rosenthal
5,361,359 A	11/1994	Tajalli et al.
5,485,409 A	1/1996	Gupta et al.
5,485,575 A	1/1996	Chess et al.
5,572,643 A	11/1996	Judson
5,606,668 A	2/1997	Shwed
5,623,600 A	4/1997	Ji et al.
5,638,446 A	6/1997	Rubin
5,692,047 A	11/1997	McManis
5,692,124 A	11/1997	Holden et al.
5,720,033 A	2/1998	Deo

5,724,425 A 3/1998 Chang et al. 5,740,248 A 4/1998 Fieres et al. 6/1998 van Hoff et al. 5,761,421 A

(List continued on next page.)

OTHER PUBLICATIONS

Jim K. Omura, "Novel Applications of Cryptography in Digital Communications", IEEE Communications Magazine, May, 1990; pp. 21-29.

Okamoto, E. et al., "ID-Based Authentication System For Computer Virus Detection", IEEE/IEE Electronic Library online, Electronics Letters, vol. 26, Issue 15, ISSN 0013-5194, Jul. 19, 1990, Abstract and pp. 1169-1170. URL:http:/iel.ihs.com:80/cgi-bin/iel_cgi?se 2ehts%26ViewTemplate%3ddocview%5fb%2ehts.

IBM AntiVirus User's Guide Version 2.4, International Business Machines Corporation, Nov. 15, 1995, pp. 6-7. Norvin Leach et al, "IE 3.0 Applets Will Earn Certification", PC Week, vol. 13, No. 29, Jul. 22, 1996, 2 pages.

"Finjan Software Releases SurfinBoard, Industry's First JAVA Security Product For the World Wide Web", Article published on the Internet by Finjan Software Ltd., Jul. 29, 1996, 1 page.

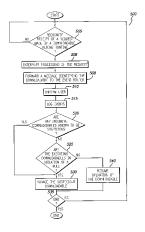
(List continued on next page.)

Primary Examiner—Dieu-Minh Le (74) Attorney, Agent, or Firm-Squire, Sanders & Dempsey, L.L.P.

ABSTRACT (57)

A system protects a client from hostile Downloadables. The system includes security rules defining suspicious actions and security policies defining the appropriate responsive actions to rule violations. The system includes an interface for receiving incoming Downloadable and requests made by the Downloadable. The system still further includes a comparator coupled to the interface for examining the Downloadable, requests made by the Downloadable and runtime events to determine whether a security policy has been violated, and a response engine coupled to the comparator for performing a violation-based responsive action.

51 Claims, 7 Drawing Sheets





U.S. PATENT DOCUMENTS

5,765,205 A 5,784,459 A	7/1998	Devarakonda et al.
5,796,952 A 5,805,829 A	8/1998 9/1998	Davis et al. Cohen et al.
5,832,208 A	11/1998	Chen et al.
5,850,559 A 5,859,966 A	12/1998 1/1999	Angelo et al. Hayman et al.
5,864,683 A	1/1999	Boebert et al.
5,892,904 A 5,951,698 A	4/1999 9/1999	Atkinson et al. Chen et al.
5,956,481 A	9/1999	Walsh et al.
5,974,549 A 5,983,348 A	10/1999 11/1999	Golan 1
6,092,194 A		Touboul 713/200
6,154,844 A 6,167,520 A	* 11/2000 * 12/2000	Touboul et al
0,107,520 A	12/2000	Toubout

OTHER PUBLICATIONS

"Powerful PC Security for the New World of JAVA™ and Downloadables, Surfin Shield™" Article published on the Internet by Finjan Software Ltd., 1996, 2 Pages.

Microsoft® Authenticode Technology, "Ensuring Accountability and Authenticity for Software Components on the Internet", Microsoft Corporation, Oct. 1996, including Abstract, Contents, Introduction and pp. 1–10.

"Finjan Announces a Personal Java™ Firewall For Web Browsers—the SurfinShield™ 1.6 (formerly known as SurfinBoard)", Press Release of Finjan Releases SurfinShield 1.6, Oct. 21, 1996, 2 pages.

Company Profile "Finjan—Safe Surfing, The Java Security Solutions Provider" Article published on the Internet by Finjan Software Ltd., Oct. 31, 1996, 3 pages.

"Finjan Announces Major Power Boost and New Features for SurfinShield™ 2.0" Las Vegas Convention Center/Pavilion 5 P5551, Nov. 18, 1996, 3 pages.

"Java Security: Issues & Solutions" Article published on the Internet by Finjan Software Ltd., 1996, 8 pages.

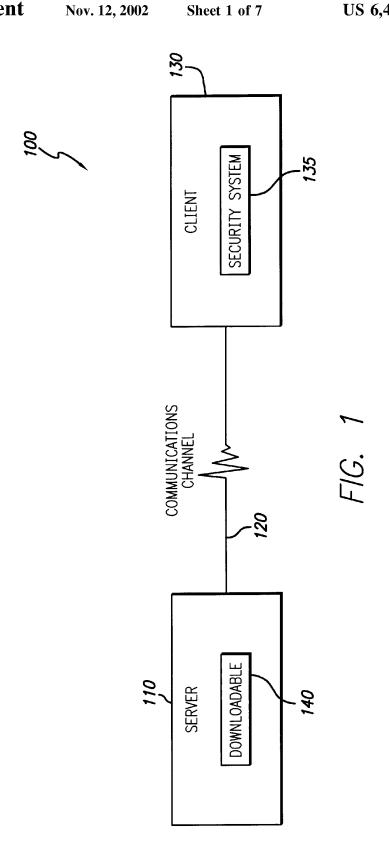
"Products" Article published on the Internet, 7 pages.

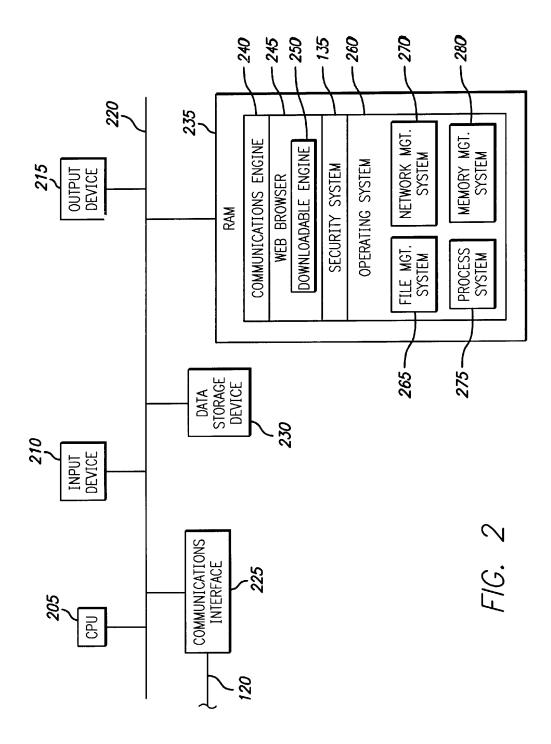
Mark LaDue, "Online Business Consultant: Java Security: Whose Business Is It?" Article published on the Internet, Home Page Press, Inc. 1996, 4 pages.

Web Page Article "Frequently Asked Questions About Authenticode", Microsoft Corporation, last updated Feb. 17, 1997, Printed Dec. 23, 1998. URL: http://www.microsoft.com/workshop/security/authcode/signfaq.asp#9, pp. 1–13. Zhang, X.N., "Secure Code Distribution", IEEE/IEE Electronic Library online, Computer, vol. 30, Issue 6, Jun. 1997, pp.: 76–79.

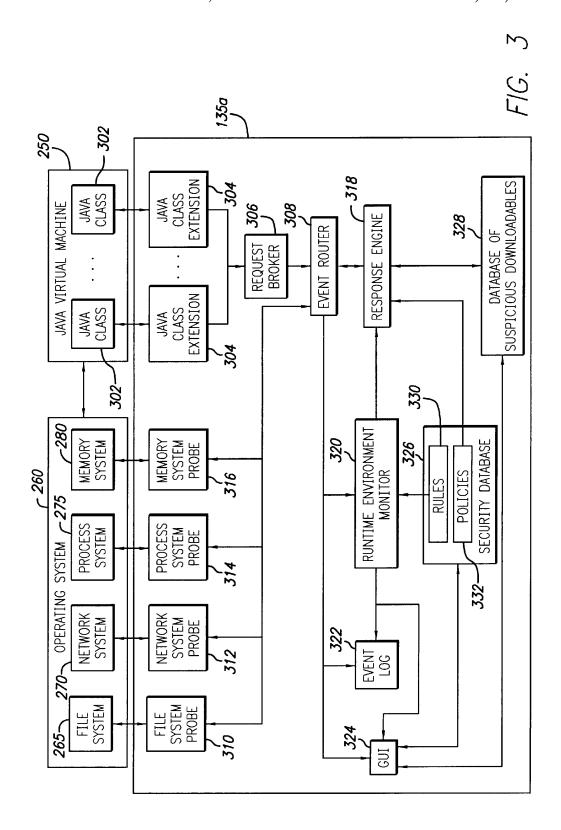
* cited by examiner













DOCKET

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.

