

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent of: Larson *et al.*
U.S. Patent No.: 7,987,274 Attorney Docket No.: 38868-0003IP2
Issue Date: July 26, 2011
Appl. Serial No.: 11/839,987
Filing Date: August 16, 2007
Title: METHOD FOR ESTABLISHING SECURE COMMUNICATION LINK
BETWEEN COMPUTERS OF VIRTUAL PRIVATE NETWORK

DECLARATION OF DR. ROCH GUERIN

1. My name is Dr. Roch Guerin. I am the chair of the Computer Science & Engineering department at Washington University in St. Louis. I have been asked to offer technical opinions relating to U.S. Patent No. 7,987,274, and prior art references relating to its subject matter. My current curriculum vitae is attached and some highlights follow.

2. I earned my diplôme d'ingénieur (1983) from École nationale supérieure des télécommunications, in Paris, France. Thereafter, I earned my M.S. (1984) and PhD (1986) in electrical engineering from California Institute of Technology in Pasadena, California.

3. Prior to becoming a professor in engineering, I held various positions at the IBM T.J. Watson Research Center. Specifically, from 1986 to 1990, I was a research staff member within the Communication Department, where I worked to design and evaluate high-speed switches and networks. From 1990 to 1991, I was a research staff member within the IBM High Performance Computing and Communications Department, where I worked to develop and deploy an integrated broadband network. From 1992 to 1997, I was the manager of Broadband Networking within IBM's Security and Networking Systems Department, where I led a group of researchers in the area of design, architecture, and analysis of broadband networks. One of the projects on which I worked, for example, led to U.S. Patent No. 5,673,318, which regards "[a]

method and system for providing data authentication, within a data communication environment, in a manner which is simple, fast, and provably secure,” and of which I am a named inventor.

See U.S. Patent No. 5,673,318, abstract. From 1997 to 1998, I was the manager of Network Control and Services within IBM’s Security and Networking Systems Department, where I led a department responsible for networking and distributed applications, including topics such as advance reservations, policy support, including for Resource Reservation Protocol (RSVP), quality of service (QoS) routing , and security, and integrated switch and scheduling designs.

4. I have been a professor of engineering for the past fifteen years. As such, but prior to becoming the chair of the Computer Science & Engineering department at Washington University in St. Louis, I was the Alfred Fitler Moore Professor of Telecommunications Networks (an honorary chair) in the Department of Electrical and Systems Engineering at the University of Pennsylvania. As a professor of engineering, I have taught many courses in networking, including Advanced Networking Protocols (TCOM 502), which addressed, among other things, virtual private networks.

5. I have authored over fifty journal publications, including “On the Feasibility and Efficacy of Protection Routing in IP Networks,” which was honored as the IEEE INFOCOM 2010 Best Paper Award. I have been named a Fellow by both the IEEE and ACM, and, from 2009 to 2012, I was the Editor-in-Chief of the IEEE/ACM Transactions on Networking. Furthermore, I am a named inventor on over thirty issued U.S. patents.

6. I am familiar with the content of U.S. Patent No. 7,987,274 (the “‘274 patent”). Additionally, I have reviewed the following: Takahiro Kiuchi *et al.*, Proceedings of the Symposium on Network and Distributed System Security, *C-HTTP -- The Development of a Secure, Closed HTTP-based Network on the Internet* (Feb., 1996) (“Kiuchi”); U.S. Patent No.

6,225,993 to Lindblad *et al.* (“Lindblad”); U.S. Patent No. 8,200,837 to Bhatti *et al.* (“Bhatti”); E. Gavron, RFC 1535, *A Security Problem and Proposed Correction With Widely Deployed DNS Software* (Oct. 1993); RFC 791, *Internet Protocol* (Sep. 1981); Kenneth F. Alden & Edward P. Wobber, *The AltaVista Tunnel: Using the Internet to Extend Corporate Networks*, p. 6 (9 Digital Technical Journal 2) (1997); and T. Berners-Lee *et al.*, RFC 1945, *Hypertext Transfer Protocol - HTTP/1.0* (May 1996). I have also reviewed certain sections of the prosecution history of the ‘274 patent, the prosecution histories of reexamination control numbers 95/001,270 and 95/001,792; and the claim construction orders from *VirnetX Inc. v. Microsoft Corp.*, Docket No. 6:07CV80 (E.D. Tex.) and *VirnetX Inc. v. Cisco Systems, Inc. et al.*, Docket No. 6:10cv417 (E.D. Tex.).

7. Counsel has informed me that I should consider these materials through the lens of one of ordinary skill in the art related to the ‘274 patent at the time of the invention, and I have done so during my review of these materials. I believe one of ordinary skill as of April 26, 2000 (the earliest possible priority date of the ‘274 patent) would have a Master’s degree in computer science or computer engineering, or in a related field such as electrical engineering, as well as about two years of experience in computer networking and in some aspect of security with respect to computer networks. I base this on my own personal experience, including my knowledge of colleagues and others at the time.

8. I have no financial interest in either party or in the outcome of this proceeding. I am being compensated for my work as an expert on an hourly basis. My compensation is not dependent on the outcome of these proceedings or the content of my opinions.

9. My opinions, as explained below, are based on my education, experience, and background in the fields discussed above.

10. This declaration is organized as follows:
 - I. Brief Overview of the '274 Patent (page 4)
 - II. Terminology (page 7)
 - III. Kiuchi and Combinations Based on Kiuchi (page 12)
 - IV. Conclusion (page 27)

I. Brief Overview of the '274 Patent

11. The '274 patent is directed to a “method for establishing [a] secure communication link between computers of [a] virtual private network.” Ex. 1001, Title. The '274 patent includes 18 claims, of which claim 1 is independent.

12. A section of the '274 patent's specification titled “F. One-Click Secure On-Line Communications and Secure Domain Name Service” describes “a technique for establishing a secure communication link between a first computer and a second computer over a computer network,” with reference to FIGS. 33-35. Ex. 1001, 45:8-10. Referring to Annotation A of FIG. 33 below, a computer 3301 establishes a VPN communication link with a server computer 3320, or a secure edge router for the server computer 3320. *See* Ex. 1001, 46:29-31, 47:41-44.

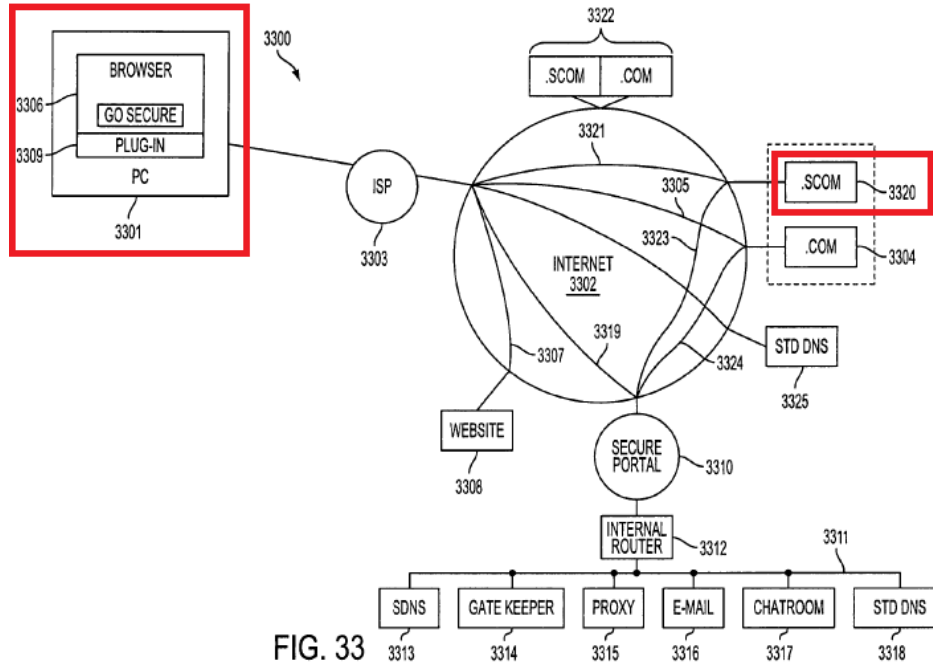


FIG. 33

Annotation A

13. The server computer 3320 is associated with a secure top-level domain name. *See* Ex. 1001, 46:33-34. Domain names are a type of human-readable name/address for resources on a network, such as the Internet. *See* RFC 1535, p. 1 (1993) (“Current Domain Name Server clients are designed to ease the burden of remembering IP dotted quad addresses. As such they translate human-readable names into addresses and other resource records.”). Domain names are resolved by name servers into numerical addresses that are utilized for packet forwarding over networks. *See id.*; *see also* RFC 791, pp. 2, 5-6 (1981). As such, domain names may be maintained in the human-readable form, which is easier for a human operator to utilize than the numerical addresses relied upon by the networks for forwarding packets. Ex. 1003, 1:49-56.

14. With respect to the term “secure top-level domain name,” the ‘274 patent notes that “[b]ecause the secure top-level domain name is a non-standard domain name, a query to a standard domain name service (DNS) will return a message indicating that the universal resource locator (URL) is unknown.” Ex. 1001, 46:41-44. Thus, in the context of the ‘274 patent, a

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